Derby to Manchester Railway
Matlock to Buxton / Chinley Link Study
Main Report

Volume 1A: Version: Final

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Derbyshire County Council

ON BEHALF OF THE FOLLOWING FUNDING PARTNERS:

- AMBER VALLEY BOROUGH COUNCIL
- BUXTON AND THE PEAK DISTRICT SRB 6 PARTNERSHIP
- COUNTRYSIDE AGENCY
- DERBY CITY COUNCIL
- DERBYSHIRE COUNTY COUNCIL
- DERBYSHIRE DALES DISTRICT COUNCIL
- EAST MIDLANDS DEVELOPMENT AGENCY (EMDA)
- EUROPEAN REGIONAL DEVELOPMENT FUND (ERDF)
- GOVERNMENT OFFICE FOR THE EAST MIDLANDS (GOEM)
- HIGH PEAK BOROUGH COUNCIL
- PEAK DISTRICT NATIONAL PARK AUTHORITY
- PEAK PARK TRANSPORT FORUM
- RURAL DEVELOPMENT PROGRAMME
- STRATEGIC RAIL AUTHORITY
- TARMAC PLC

DERBY TO MANCHESTER RAILWAY
MATLOCK TO BUXTON / CHINLEY LINK STUDY

Volume *1A*: *Main Report*

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REPORT VERIFICATION

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DERBY TO MANCHESTER RAILWAY
MATLOCK TO BUXTON/CHINLEY LINK STUDY
Volume 1A: Main Report

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EXECUTIVE SUMMARY

Introduction

The former section of railway between Matlock and Buxton once formed part of a direct main line rail link between London/Derby and Manchester and was once very busy with freight traffic and both local and Manchester to London passenger services. The route survived the line closures of the 'Beeching' era in the early 1960's but lost much of its freight traffic as a result of the rationalisation of rail freight that Dr. Beeching introduced.

Withdrawal of passenger services was eventually proposed by British Rail in 1966 with local services between Chinley, Buxton and Matlock ceasing in 1967. Express services between Manchester and London (which also used the route) were diverted to other routes in 1968 and the section of line north of Matlock finally closed.

The potential re-opening of the former railway line between Derby and Manchester via Matlock and Buxton/Chinley has been the subject of considerable interest over the past 10-15 years. Derbyshire County Council, acting as the client for the other key stakeholders, appointed Scott Wilson Railways on 23rd October 2002**,** to carry out a study which was to be seen as definitive on the case or otherwise of re-opening.

Study Approach

Overview

The Study has consisted of five principal stages - Data Collection, Review and Surveys, Analysis and Option Identification, Option Development, Option Appraisal and Reporting.

A wide range of issues have been covered, including Rail Infrastructure and Operations modelling, Environmental Appraisal, Demand Forecasting, Communication and Consultation and Costing, Appraisal and Funding.

Rail Services

Various options of passenger train service frequency and route (either via Buxton or via Chinley) were identified and assessed for practicality, cost and demand. The market for rail freight services and the additional costs of accommodating them were also identified.

Eight combinations of services were taken forward to further assessment. These were:-

Option Group 1 – services operating via Buxton

Option 1A 'Low Specification' Passenger only service. Typically maximum speed 50mph with a frequency of one train per hour (a stopping service calling at all stations between Derby and Manchester) in each direction

Option 1B 'High Specification' Passenger only service. Typically maximum speed 75mph with a frequency of two trains per hour (one stopping – as per Option 1A; one 'semi-fast' calling at principal stations only) in each direction.

Option 1C 'Low Specification' Passenger service as per Option 1A plus freight capability of one freight train path per hour in each direction.

Option 1D 'High Specification' Passenger service as per Option 1B plus freight capability of one freight train path per hour in each direction.

Option Group 2 – services operating via Chinley

Options 2A to 2D Similar to 1A to 1D above but with the services operating via the Chinley route rather than Buxton with a possible new station at Chapel en le Frith.

Alternative 'non-rail' options

A range of alternative 'non- rail' options were examined to identify if any offered a viable alternative to achieve the objectives set for the rail link.

The Route

The former railway route was subject to review to confirm the practicability and cost of re-instatement. This included development of proposals to replace missing infrastructure and overcome obstructions to the alignment.

Environmental

The environmental investigation commenced with a base line study of existing environmental conditions in respect of Planning, Land Use, Community issues, Landscape and Visual, Nature Conservation and Bio-Diversity, Cultural Heritage, Water Resources, Noise and Vibration and Air Quality. The options identified have then been assessed to identify potential effects in these areas.

Consideration has been made of alternative routes for a replacement Monsal Trail.

Demand Forecasting, Economic Assessment and Funding

Factors likely to affect future demand – including the existing transport infrastructure and public transport network, existing public transport usage and tourism and regeneration opportunities – have been assessed.

Demand forecasts for rail services have then been made over a 30 year period for a number of rail service options based on a 'notional' opening date of 2011.

These forecasts have been made for the overall study area (broadly the whole of the Peak District National Park plus Matlock to Ambergate and the Buxton area) and for a narrower core corridor enveloping the rail route and adjacent A6 road. The forecasts have included a 'Do – minimum' Reference Case. This Reference Case assumes that transport infrastructure and public transport services (rail and bus) remain as currently existing over the 30 years to 2041.

The economics of the proposals have then been assessed and tested for sensitivities in revenue and operating cost assumptions.

A review has been made of potential sources for funding for further development and implementation.

Consultation

Throughout the study period consultation has been made with stakeholder, interest groups and the general public. This has taken many forms including Project Reference Group meetings, market research, a web site, newsletters and a public 'roadshow'.

Key Findings

Passenger Demand

The area through which the railway would pass has limited regeneration and residential growth potential as a result of the Structure and Local Plan policies that are in place, particularly within the Peak District National Park. Tourism is, and is likely to remain, a key contributor to the local economy and the railway would undoubtedly assist in allowing further development and promotion of tourism on a sustainable basis – minimising the effects of tourism growth on the environment.

- The Reference Case forecasts that, by 2041, road traffic volumes in the rail corridor will have risen by 140% (i.e more than doubled). Rail demand (on the existing network) will have risen by 105%.
- Compared to the Reference Case the 'via Chinley' and 'via Buxton' routes both show further increases in passenger growth (additional to the Reference Case) along the core corridor by 2041 - 109% (via Chinley) and 55% (via Buxton).
- In 2041, a re-opened railway is forecast to result in 920,000 fewer car movements per year in the study corridor when compared to the 'Do Minimum' situation. However, this is only approximately 2% of predicted corridor road traffic in that year.
- Some of the forecast increases in passenger volumes between Manchester and Derby both on the 'via Chinley' and 'via Buxton' routes arise from passengers diverting from the alternative routes via Sheffield and Stoke on Trent.
- Compared to the Reference Case, introducing restraint to road vehicles in the Peak District National Park (modelled as an Area Charge) deters some people from using the road network and encourages increased use of rail. This is reflected in a 7% reduction in vehicle kilometres in the core study area and an increase of 70% in rail passenger volumes compared to the situation without road restraint.

The forecasts for additional annual rail journeys – over and above natural growth (i.e the Reference Case)- generated by the new link are:-

		Additional Journeys			
Option		1A via Buxton.	1B via Buxton.	2A via Chinley	2B via Chinley.
Year	Reference Case Annual Journeys	Hourly services	Twice Hourly services	. Hourly services	Twice Hourly services
2011	1,160,000	290,000	500,000	610,000	1,070,000
2021	1,590,000	470,000	810,000	870,000	1,500,000
2031	1,940,000	610,000	1,050,000	1,080,000	1,860,000
2041	2,270,000	700,000	1,210,000	1,260,000	2,170,000

Freight Demand

The demand for freight services is limited by the stated intention of the Strategic Rail Authority and Network Rail not to use the re-opened line as part of a strategic – or diversionary – freight route. The freight market that has been identified is partially dependent on the future strategic direction of the national aggregates industry in terms of sources of extraction and distribution terminal development. Resulting demand is assessed to be between 4 and 10 loaded trains per day.

Alternative 'non rail' options

A viable non- rail alternative has not been identified. A bus based solution offers the best alternative but this would deliver transport capacity on a vastly smaller scale to that achievable by rail. If a rail solution is not developed it is likely that the status quo will prevail.

Infrastructure

There are no insurmountable engineering difficulties in constructing a railway along the former corridor between Matlock and the existing Buxton to Chinley freight line at Blackwell Mill. However, a number of bridges will require to be replaced and a short section of new railway is required to pass around a gas regulator that has been constructed south of Rowsley.

Achieving a new station at Buxton, to suit the through route to Matlock, will, however, be difficult due to geometric, topographic and land use constraints. Two potential solutions have been identified including the continued use of the existing station (requiring trains to reverse direction). Neither are ideal. The more expensive option has been used in economic assessments of the project.

Significantly different levels of railway infrastructure are required to support the different options of rail service frequency.

Considerable work would be required to upgrade the existing freight-only route from Peak Forest to Chinley and this remains a key risk in using that route for new rail services.

The capital cost of the options are:-

For services via Buxton.

(1A). Hourly services	(1B). Twice Hourly services	(1C). Hourly services plus freight capacity	(1D). Twice Hourly services plus freight capacity
£84.1 million	£103.6 million	£108.85 million	£119.5 million

For services via Chinley

(2A). Hourly services	(2B). Twice Hourly services	(2C). Hourly services plus freight capacity	(2D). Twice Hourly services plus freight capacity
£89.5 million	£107.9 million	£113.1 million	£123.6 million

Environmental Appraisal

Reopening of the railway would have the potential to impact upon ecology, archaeological resources, water resources, soils, geology and air quality, as well as the landscape. The potential effects of noise and vibration also need to be taken into account.

Many of the environmental effects anticipated are common to all options being considered, however, the appraisal highlights that environmental effects increase as track usage intensifies. This is especially the case with the introduction of freight, which significantly increases impacts associated with noise.

With regard to the Peak District Dales Candidate Special Area of Conservation (cSAC), it is concluded that the integrity of the cSAC would not be significantly affected but would be subject to a minor adverse effect. The nature conservation features and objectives for which this area was designated would continue to be maintained - this is mainly due to the very small amounts of landtake compared to the overall size of the cSAC. With appropriate mitigation, no adverse effects should occur to affect the nature conservation importance of the River Wye SSSI.

The rail link does not appear to deliver any significant environmental benefits associated with modal shift from road to rail – although it is forecast to result in 920,000 fewer car trips in the A6 corridor by the year 2041 (measured against traffic volumes without a railway). As such, there appears to be an imbalance between environmental benefits and disbenefits.

The review of options for a replacement to the Monsal Trail has concluded that a new route - that satisfies the guidance provided by the Peak District National Park Authority - could be achieved. However, significant further planning and development would be required.

Financial and Economic

The approach taken to the Financial and Economic Cost Benefit Analysis has been to use the Strategic Rail Authority's Appraisal Criteria documents of April 2003. These follow the approach outlined in the Guidance on Methodology for Multi Modal Studies (GOMMMS), and are in line with Treasury Guidance on Appraisal and Evaluation in Central Government (The "Green Book").

The options have been assessed in terms of

Net Present Value – a process by which the capital costs, operating costs and revenues over a 30 year operating period are 'discounted' at an agreed annual rate (currently 3.5%) to provide a value of the project at current price levels.

Transport Economic Efficiency (TEE) - a calculation that provides a wider financial assessment – capturing the wider economic benefits including such items as the value of time savings to non rail users, increased tourism income etc, and

Annual operating profit or deficit.

All options show a significantly worse Net Present Value than the 'Do Minimum' Reference Case (i.e maintaining the status quo), with the ranking of the best three options being:-

1 'Do Minimum' Reference Case (NPV; minus £300,000)
2 Hourly services via Buxton (NPV; minus £95,400,000)
3 Hourly services via Chinley (NPV; minus £106,300,000)

The inclusion of wider economic benefits within the TEE calculation still result in Benefit/Cost ratios (compared to the 'Reference Case') of less than one – indicating that, even with the inclusion of other benefits, all the options are worse than the Reference Case.

A comparison of the operating profit/subsidy profiles over a 30 year period suggests that all options will require an operating subsidy for a number of years after commencement of rail services. However, this conclusion is very sensitive to changes in assumptions on operating cost and patronage/fare levels. The comparison shows that the hourly service via Buxton requires the lowest subsidy profile.

Providing regular train paths for freight traffic worsens the economic profile in all options. However, the 'passenger only options' would have some marginal capacity for freight which could be utilised for occasional services at no additional cost.

Funding and Delivery Mechanisms

It is likely that a substantial proportion of the funding will need to come from 'public sources'. However, opportunities do exist, in conjunction with various 'delivery mechanisms' to involve some private sector sources of capital.

In the current financial climate within the railway industry, the 'traditional' mechanism for development and funding the works – sponsorship by the Strategic Rail Authority and implementation via Network Rail as an 'enhancement scheme'- is unlikely to deliver the project.

Alternatives do, potentially, exist – although they remain largely untried in the national rail industry to date. These include the use of contractor led Special Purpose Vehicles to design, finance and build enhancements with the works then being transferred back to Network Rail for operation and maintenance. Alternatively the Special Purpose Vehicle can continue to own and operate the enhancement for a specified number of years.

Consultation

Whilst a significant majority of the public who expressed a view supported the proposed railway re-opening, the level of potential opposition is greater than might normally be expected for such a proposal. This is due, in part, to the specific characteristics of the route - its environmental sensitivity and the effects on the Monsal Trail.

If the project proceeds, application for an Order under the Transport and Works Act 1992 will, ultimately, become necessary. Based on the current knowledge of the views of stakeholders, special interest groups and the public, a significant number of objections can be anticipated.

CONCLUSIONS

The study has been carried out against a background of a rapidly changing national railway industry in both structural and economic terms. These changes are likely to continue in the near future.

The railway would clearly assist in achieving many of the Themes of the Derbyshire Local Transport Plan, in particular Better Travel Choice, Successful Local Economies, a Better Managed Road Network and Low Impact Leisure.

Current policy is supportive of the scheme, previous studies have been favourable, and consultation showed good support. However, the results of the study show a clear deficit in benefits to justify the capital costs of re-opening by 2011 or soon afterwards. This is based on the railway being part of the National Rail network and assessed – in capital and operating costs terms - accordingly. Network Rail and the Strategic Rail Authority have both expressed the view that the Hope Valley Line between Chinley and Sheffield has sufficient medium term capacity for both freight and passenger rail traffic growth. In the light of this we have not been able to attribute to the route any financial benefits arising from the additional overall rail network capacity (or the potential to carry emergency or planned service diversions), which the link would create.

In the longer term (2025 onwards), however, the economic assessment for the railway is forecast to be much better. A significant increase in road traffic is predicted in the corridor by 2041 and the railway is predicted to be able to slightly reduce this increase. The railway would, further, facilitate a greater reduction in the rate of traffic growth if combined with some form of road traffic restraint. Rail passenger traffic is forecast to grow significantly nationally over the same period and there is reason to believe that such growth trends would also occur in the study corridor.

All the economic forecasts indicate that a railway operating in the latter years of the study period (2025 onwards) would have a much better financial profile than one opening in 2011 or soon after.

The best option in economic terms is a ‘passenger only’ railway with an hourly service. Specific provision for regular freight traffic (the only freight identified is that originating in the north of the study corridor) would require specific additional funding. However, the ‘passenger only’ railway would still be capable of accommodating some freight services, although not on a regular hourly basis. All options considered show a worse economic assessment than the ‘Reference Case’ (maintaining the status quo in terms of transport provision within the study area).

No alternative means of delivering public transport within the corridor on both a regional and local scale has been identified. If the railway is not constructed it is, therefore, likely that the ‘status quo’ will prevail, with limited (local) public transport being delivered by bus services.

The former railway alignment affords the only, practical, segregated route through the area for public transport. Its condition overall is very good and reinstatement of a railway would not incur the need for the significant ‘new construction’ activity that would be required on any other alignment.

As with all such schemes, substantial capital funding will be required and the majority of this is likely to need to come from ‘public ’ sources. Whilst there has been a lot of support from various parties, no firm commitments to the principle of funding have been identified, and the climate for this funding has worsened during the course of the study.

RECOMMENDATIONS

Our recommendations are that the study partners should:-

1 On the basis of the longer term demand/economic forecasts together with the fact that the route offers the only practicable future route, consider putting in place or extending the safeguarding of the corridor for future public transport use.

2 Consider how blight, consequential upon retaining the safeguarding of the route, may be removed or reduced for those most affected. Establishing a 'not before' date may be one way of achieving this.

3 In any event, limit further development until such time as a funding mechanism for delivery of the whole project can be identified. Many aspects of further potential assessment – engineering and environmental – have only a short period of 'validity' and delays in project implementation would result in the need to repeat this work to capture any changes in circumstances in the intervening period.

4 In relation to item 3, consider how private finance opportunities may be maximised to reduce the public finance element of the overall project cost. These opportunities may be influenced by the composition of the 'project delivery' organisation (e.g. the creation of a Project Board or 'Special Purpose Vehicle')

5 Consider how, if recommendation (1) is accepted, the condition of the route – and in particular the structures - can be maintained in the future to minimise future costs of railway re-instatement.

1. INTRODUCTION

1.1 BACKGROUND TO STUDY

Derbyshire County Council has been exploring the possibility of reopening the former Midland Railway line from Matlock to Buxton and Chinley for some years. The route formed part of a direct main line rail link between London/Derby and Manchester and was once very busy with freight traffic and both local and Manchester to London passenger services.

The route survived the line closures of the 'Beeching' era in the early 1960's but lost much of its freight traffic as a result of the rationalisation of rail freight that Dr. Beeching introduced.

Withdrawal of passenger services was, eventually, proposed by British Rail in 1966 with local services between Chinley, Buxton and Matlock ceasing in 1967. Express services between Manchester and London (which also used the route) were diverted to other routes in 1968 and the section of line north of Matlock finally closed.

The re-opening of the railway has been identified as desirable in a number of previous area transportation studies.

The scheme is already included in the Regional Planning Guidance for the East Midlands and is supported in principle by all the relevant Local Authorities as well as EMDA and NWDA. It is also a key element of the South Pennines Integrated Transport Strategy (SPITS) which has been developed by a partnership of local authorities and other organisations and has Government support.

The scheme is also seen as an important element in the overall transport strategy for Derbyshire as set out in the Local Transport Plan.

Since 1995 Derbyshire County Council and other partners have commissioned a number of studies relating to the re-opening of the Matlock to Buxton Railway line. These studies have related to engineering, freight and passenger demand and have all been positive concerning the re-opening of the line.

Similarly the Peak Transport Forum, which consists of representatives from various local authorities, has been working towards developing a transport strategy for the South Pennines area, known as SPITS (South Pennines Integrated Transport Strategy). Studies undertaken to inform SPITS have also identified that the railway could make a positive contribution to the overall strategy.

In transportation terms it is anticipated that the re-opening of the Matlock-Buxton line could help alleviate a number of problems as follows:

- Only 2% of the annual visitors to the Peak District National Park use public transport.
- There is traffic congestion on the A6 and other unsuitable roads with no acceptable road based solution
- The perception of poor road and rail links between East Midlands and Greater Manchester
- There is a significant amount of road based quarry traffic along the A6 with no reasonable rail alternative
- There is a steady increase in tourism in the Peak District which is likely to be accentuated now that Derwent Valley Mills has become a World Heritage Site

The re- opening of the railway has been seen as offering the following potential benefits and opportunities:-

- Relief of congestion in roads within the Peak District National Park
- Opportunities to promote traffic restraint on parallel road routes
- Potential transfer of freight from road to rail
- Allow more trips to be made by public transport into the National Park
- Potential for park and ride to the recreational areas
- Provide fast and direct inter-regional rail links
- Offer additional overall rail capacity
- Reduction in road based commuting journeys by providing viable public transport alternatives
- Improve accessibility to employment and education for local people
- Create new job opportunities in the National Park
- Promote part of the line as a tourist attraction in its own right

1.2 APPOINTMENT AND REMIT

Derbyshire County Council, acting as the client for the other key stakeholders, , decided to seek expert advice on the implications of reopening the railway, and guidance on whether it is the best way of achieving the objectives set out in the County Council's Local Transport Plan.

Following a competitive tendering exercise, Derbyshire County Council, on behalf of the Client Group, appointed Scott Wilson Railways on 23rd October 2002**,** to carry out a study to a detailed brief which can be encapsulated in the following extract:

"*This project does not simply involve re-opening a railway line. Its success will depend on a range of complementary measures such as road traffic management, supporting bus services and improvements for pedestrian and cyclists. The project should be seen as a complete integrated transport package, with the new railway at its core".*

The study was to deliver:-

- A completed robust assessment of individual service and infrastructure options and complementary measures
- An appraisal of a number of these
- Recommendation of a preferred option

1.3 SCOPE OF THE STUDY

The study is one about a possible re-opening of a railway – albeit as a core to an integrated transport package. – rather than an 'area transportation study'.

However, in keeping with requirements for the appraisal of railway projects the rail based solutions have been compared with both 'Do Minimum' (i.e continue with the status quo in terms of transportation provision) and a 'Non rail based' option. The determination of form of the 'non-rail' based option – which is discussed later – has been determined in conjunction with the Client Group.

The study brief required that infrastructure options were developed, generally, to 'Level 2' as defined in the, then, Railtrack (now Network Rail) Project Development Matrix. More significant elements were to be developed to 'Level 4'.

The potential effect on the Monsal Trail, which uses substantial sections of the former trackbed, was identified within the study brief. A report from an earlier study into alternative Trail arrangements was supplied as part of the study brief. However during the course of the study it became apparent that the recommendations in this previous report would need to be re-visited and further developed owing to changes in aspirations for the new trail. This element of work was therefore added to the study brief and the details reported on separately in Volume 4.

1.4 MANAGEMENT OF THE STUDY

The study has been managed in three levels. At the top level a Project Reference Group was established to provide overall guidance for the project. This was chaired by the County Council Cabinet Member for Environment and Transport and met on three occasions during the study period. The membership of the Project Reference Group – which was established by the Client - was drawn from groups, organisations and individuals with an interest in the project. It included members of the Project Advisory Group. The full composition is shown in Appendix B

The Project Advisory Group formed a second tier of management overview. This group was responsible for supporting Derbyshire County Council in the overall management of the project. The Project Advisory Group met at regular intervals. The group was chaired and managed by the Director of Environmental Services, Derbyshire County Council and comprised those groups and organisations most directly involved in developing and funding the project. Membership consisted of Network Rail (formerly Railtrack), the SRA, the Peak District National Park Authority, Peak Park Transport Forum, the East Midlands Development Agency (EMDA), The Countryside Agency and key members of the Project Working Group. The Government Office for the East Midlands (GOEM) and the North West Development Agency also accepted invitations to attend group meetings in an observer capacity.

Managing and advising on the work being undertaken on a day by day basis was carried out by a Project Working Group. This group was made up of officers in the Environmental Services and Chief Executives Department of the County Council with specialist knowledge in relevant areas such as civil engineering, environmental appraisal and public transport operation.

2. METHODOLOGY AND REPORTING STRUCTURE

2.1 METHODOLOGY

The study has consisted on a number of stages, as follows:-

1. Data Collection, Review and Surveys
2. Analysis and Option Identification
3. Option Development
4. Option Appraisal
5. Reporting

Throughout these stages there was consultation with both the public and stakeholder groups.

The study led to the identification of five main 'work-streams' all of which were interlinked. The main areas of activity have therefore been:-

- Rail Infrastructure and Operations
- Environmental Appraisal
- Demand Forecasting
- Communication and Consultation
- Costing, Appraisal and Funding

In the **Data Collection, Review and Survey stage,** the study concentrated on identifying major aspirations (from stakeholders) and the constraints – particularly in respect of infrastructure and environment - to see whether there were any "show-stoppers" i.e., issues which would stop the study at that stage. This involved a number of activities including:-

- Review and validation of previous reports
- Walkover surveys
- A baseline environmental survey
- Market research (freight and passenger)
- Additional Traffic surveys (Roadside Interviews)

Analysis and Option Identification centred around the consideration of a number issues including:-

- What form a rail link might take (in both infrastructure and service pattern)
- What realistic (non rail) alternatives there were
- Passenger demand
- Freight demand
- What complementary measures might be required

This process was supported by :-

- Construction and initial runs of a passenger demand model
- Analysis of existing rail patronage
- Development of freight usage predictions based on market research

- Basic rail operations (timetabling) modelling

The **Option Development** phase built on the emerging 'most likely' options and developed them in further detail. This process involved:-

- Identifying engineering solutions to potential rail corridor constraints
- Further rail timetable modelling
- Further modelling of passenger and freight demand
- Consideration of alternatives to the Monsal Trail.

The **Option Appraisal** process has involved:_

- Preparation of an Environmental Appraisal Report
- Establishing the financial appraisal framework
- Investigation of funding regimes
- Preparation of capital cost estimates
- Sensitivity testing of appraisal forecasts

Reporting has been carried out during the study to the Project Working Group, Project Advisory Group and – on two occasions – to the Project Reference Group. These volumes reflect the final Study Reporting.

2.2 STUDY REPORT STRUCTURE

The extent of work to be covered in the five stages noted above has brought a considerable reporting requirement. In order to make reports of a manageable size and to reflect the differing interests of readers, reporting has been split into a number of Volumes, a schedule of which is set out below.

Volume	Title/Subject	Scope/Principal Contents
Volume 1 Part A	Main Report	Draws on and summaries the findings reported in more detail in other reports. Summary economic and environmental appraisals.
Volume 1 Part B	Annex to Main Report	Additional detailed reporting supporting the Main Report.
Volume 2	Environmental Appraisal Report	Reporting of the assessment of the environmental issues based on the constraints and assumptions identified in Volume 6
Volume 3	Infrastructure and Operations Report	Detailed assessment of railway infrastructure and operations issues, costing of capital works.
Volume 4	Monsal Trail Options Report	Consideration of options for the Monsal Trail
Volume 5	Market Research, Consultation and Communication Report	Findings from Market Research, Public consultation and discussions with key stakeholders.
Volume 6 Part A	Environmental Assumptions and Constraints Report Text	Assessment of the environmental issues and the base line situation
Volume 6 Part B	Environmental Assumptions and Constraints Report Figures	Mapping and other figures to support Volume 6 Part A
Volume 7	Route plans (1:2500)	Overview of route with principal railway infrastructure identified
Volume 8 Part A	Geotechnical Report	Geotechnical assessment. Findings summarised in Volume 3.
Volume 8 Part B	Geotechnical Report Figures and maps	Site walkout records, mapping etc.

This report, Volume 1A is the Main Report. As such, it is intended to be a free standing document summarising the overall study findings. Volume 1B contains further data, not contained in other volumes of the report, to support the Main Report.

2.3 LAYOUT OF THIS VOLUME

Many of the elements of the study have 'overlapped' with each other and involved adopting an iterative approach. Reporting the process and outputs in a logical sequence can, therefore, be difficult to achieve, but, it is hoped that the layout of the contents of each chapter - as set out below – follows as closely as possible the study process described in the section above.

The background to the study has been set out in **Chapter 1**.

Chapter 3 reviews the development of the transportation strategy in the study area and the ensuing transportation and environmental policies that have emerged with respect to a possible re-opening of the Matlock to Buxton/Chinley rail link.

Chapter 4 examines the existing transport infrastructure and services within the study area, to establish the context within which proposals in this studies are made.

A review of potential economic drivers and constraints – principally tourism, housing, employment, development and re-generation – are provided in **Chapters 5 and 6.**

The highlights of the market research and public consultation exercise are summarised in **Chapter 7**.

Chapters 8 and 9 summaries the options identification process for passenger and freight rail services respectively.

Possible complementary measures are discussed and debated in **Chapter 10.**

The process of identification of an alternative 'non rail' based option is reported in **Chapter 11**.

The findings from further development of the rail options (reported in detail in Volume 3) are summarised in **Chapter 12**, whilst **Chapter 13** reviews the options for the Monsal Trail, which would be displaced by the railway.

Chapter 14 summarises the assessed Capital and Operating Costs of each option with **Chapter 15** covering the results of the demand forecasting exercise.

The results of the Economic and Qualitative Appraisal together, with sensitivity testing, are contained in **Chapter 16** with Appraisal Summary Tables in **Appendix A**.

A summary of the Environmental Appraisal of options is reported in **Chapter 17** with Key Environmental Constraints Maps contained in **Appendix B.**

Funding sources and delivery mechanisms are briefly summarised in **Chapter 18,** with Risk Assessment and Assumptions recorded in **Chapter 19**.

The report concludes with an overall summary, conclusions and recommendations in **Chapter 20**.

3. EXISTING STRATEGIES AND POLICIES

3.1 GENERAL

This Chapter briefly reviews the development of transportation strategies and resulting policy documents which therefore include reference to the re-opening of the Matlock to Buxton/Chinley link.

It has not been part of this current studies remit to re-examine this 'strategic level' development of policy.

3.2 SOUTH PENNINES INTEGRATED TRANSPORT STRATEGY

The Peak Park Transport Forum, which consists of representatives from various local authorities, has developed a transport strategy for the South Pennines area, known as SPITS (South Pennines Integrated Transport Strategy). The strategy has been developed over a number of years. Public consultation and participation have been combined with technical studies as the strategy has been developed. Studies undertaken to inform SPITS have also identified that the re-instatement of the Matlock to Buxton/Chinley section of railway could make a positive contribution to the overall strategy if linked with road traffic restraint. Brief details of some of the studies undertaken are given below.

In 1995 Oscar Faber/ TPA undertook a study into the transport needs of the South Pennines for the Peak Park Transport Forum. The thrust of this study was to develop options aimed at providing an unambiguous transport strategy for the Peak District National Park and its surrounding area, that protected the environment whilst meeting the economic and social needs of the area. The recommendations of the report included improvements to the A628 and the A52/A523 along with traffic restraint measures including 40mph speed restriction throughout the Peak District National Park. The report further considered rail improvements including enhanced trans-Pennine rail services, increased use of rail for freight delivery and consideration of the re-opening of the Matlock-Buxton/Chinley railway. The report also stated that the re-opening of Woodhead rail route (between Manchester and Sheffield) should not be considered at this time.

The 1995 report also expressed concern regarding the potential adverse environmental impact of the proposed A6 Disley High Lane Bypass.

In 1997, RPS and Oscar Faber undertook the next stage of the strategy development by completing the strategic level environmental assessment of selected strategy options for the Peak Park Transport Forum. This analysis aimed to provide a strategy offering the greatest overall environmental benefits. A number of options and sub options were tested and as a result a recommended strategy evolved.

This recommended strategy included the introduction of traffic restraint measures (including proposals for a blanket 40mph speed restriction throughout the Park that was not accepted), improvements to the A628 (including Mottram-Tintwistle bypass - a wide single carriageway standard with climbing lanes, and mitigation measures to minimise environmental impact), a re-opened Matlock-Buxton/Chinley rail route (with acceptable diversion of strategic footpaths), and protection of the Woodhead rail route corridor.

These recommendations were then the subject of an extensive public consultation exercise in 1998. This consultation included resident's surveys, visitor surveys, focus groups involving local businesses and environmental groups and consultation with special interest groups and emergency services.

Questionnaires were distributed at the exhibitions held at nineteen locations in the area and the following findings emerged:-

- traffic congestion was seen as the main problem
- traffic speeds concerned residents
- pollution was seen to be a major issue

Of the proposals put forward during the consultation seven were supported by the majority of residents and visitors:

- re-open Matlock-Buxton railway
- improve train services Manchester-Huddersfield, Sheffield and Derby
- use railways more to carry goods
- traffic calming and lower speeds in the Peak District National Park and surrounding area
- improvements to A628 Woodhead route
- Mottram-Tintwistle by-pass
- improvements to A52/A523 corridor

Participation Workshops were then held aimed at reviewing the objectives of the strategy in the light of current developments in the field of transport, and questioning which additional transport elements should be included, how public participation could be improved, and how the whole strategy (SPITS) could be taken forward.

3.3 PEAK RAIL LINK TRANSPORT STUDY

A further transport study into a Peak Rail Link was undertaken by Steer Davies Gleave in 1998 on behalf of the Peak Rail Joint Venture. This report assessed the demand potential for the reopening of the line from Matlock to Buxton through the Peak Park. The thrust of the proposals were significantly different in nature from those of the current study . For example, Peak Rail Link was based more around tourism and did not consider inter-regional demand. However, various markets were investigated and it was concluded that there are good reasons to believe that a new public transport based 'experience' may be an effective way of managing visitor pressures in the Peak District National Park. The scope for linking this service with other attractions was suggested as was the possibilities of providing park and ride sites to intercept tourist flows into the Peak District National Park. The report specifically says "Peak Rail, if packaged appropriately with other complementary measures has the potential to contribute in a number of worthwhile areas." These included:

- developing the economy
- creating new tourist attractions
- removing traffic from local roads
- reducing through traffic, generating road safety benefits
- contributing to the development of sustainable tourism
- assisting general conservation programmes.

3.4 POLICY CONTEXT

Regional Planning Guidance for the East Midlands produced in January 2002 by The Government Office of the East Midlands, contains a number of relevant policies. Including **Policy 68**, within Chapter 6 (Transport) which states: *'The Regional Transport Strategy supports studies for and investment in passenger rail services including: Improving east-west rail routes including Trans-Pennine rail services, and the possible reopening of the Matlock to Buxton/Chinley railway as part of the South Pennines Integrated Transport Strategy. This route in particular would need to take into account environmental assets of international and national importance that should, if possible, be protected'*.

Derbyshire County Council's Local Transport Plan places a significant emphasis on the importance of the re-opened railway line. Particular weight is given to the need to build up a network of the key road, bus, rail and cycle routes that lie at the heart of their integrated transport system. The impact the railway will have on the success and strategy of the overall Local Transport Plan is emphasised.

The Derby and Derbyshire Structure Plan contains several policies of relevance including encouragement to increase use of public transport **(Policy GDSP1),** development and improvement of the rail network including Matlock to Buxton/Chinley **(Policy TP6).**

The East Midlands Regional Economic Strategy (RES) 2003 – 2010 identifies 12 strands of activity which, collectively, cover the issues important to the East Midlands. These are intended to hold together as a single approach, however those of most direct relevance to this study are:

Site provision and development:

To enhance indigenous local employment opportunities and promote the Manchester – Derby rail link reopening as a new national freight route, although mindful of the need to protect the unique quality of the Peak District National Park as an asset in the region.

Transport:

"Transport in the region is hugely important to attract and retain investment, drive and support economic growth and provide individuals and communities with the necessary access to employment and training opportunities that will enable them to participate in the economy."

"Key rail priorities in the region include the Manchester - Derby rail link as a strategic inter – regional route for both passenger and freight".

It will seek to increase investment in rail infrastructure improvements by influencing the SRA.

Rural Development:

"Improve the rural physical infrastructure, including transport, housing and workspace through application of appropriate funding streams and greater integration of relevant agencies".

The **Peak District National Park Authority** has two principal statutory purposes:-

- To conserve and enhance the natural beauty, wildlife and cultural heritage of the area;
- To promote opportunities for the understanding and enjoyment of the parks' special qualities by the public;

While carrying out these purposes it also has a duty to seek to foster the economic and social well being of the communities within the National Park.

The **Peak District National Park Local Plan** (Adopted March 2001) contains two key policies relevant to the Railway. **Policy LT3 (Cross-Park traffic: Road and Rail)** states that ***"****Cross-Park transport infrastructure projects will be opposed unless there is a net environmental benefit to the National Park and wherever practicable they also provide economic benefits and meet local transport needs"*.

Policy LT6 (Railway Construction) states that "*New railways designed primarily as tourist attractions will not be permitted"*.

The National Park Authority has, no issue in principle with the reinstatement of the Buxton-Matlock Railway line. However, there are caveats, particularly regarding the exact nature of development once the line is reinstated.

The Peak District National Park Local Plan supports **Policy LT6** with the following statement:

'The National Park Authority encourages the reintroduction of railways into areas they once served, provided that they can demonstrate a local need and a National Park benefit. Policy LT3 covers cross-Park railways. Proposals to construct railways purely as a tourist attraction are not viewed sympathetically and are likely to be refused because of incompatibility with recreation policies. Experience elsewhere indicates that a rail terminus is likely to generate additional road traffic, with demand for parking and other facilities. If the line is tourist orientated then this problem is likely to be even more acute. In the case of the Peak Rail proposals to re-open the Buxton to Matlock line as a tourist railway, the Joint Planning Board has taken the view that termini within the National Park would be unacceptable, except as part of a phased construction programmes. There is no reason to change this stance.'

Within the **Peak District National Park Structure Plan** the key policy for the Buxton-Matlock railway is **T6**, which dictates the context in which Local Plan policies are prepared.

Transport Policy 6: Public Transport

a) The Joint Planning Board will use its powers to retain and improve public transport infrastructure where practicable. In any village or area management scheme, or any new development, these powers will be used to encourage the appropriate physical provision for the continuation or introduction of public transport, including park and ride. The Board will encourage the authorities and agencies with statutory responsibility for public transport and highways to use their powers to the same ends.

b) The route of the former railway between Hadfield and Dunford Bridge, especially the Woodhead tunnel, will be safeguarded for possible re-use as a railway.

c) The reinstatement of the Buxton to Matlock railway line will be supported and that section of the route within the National Park will be safeguarded

Following closure in 1967 most of the railway track bed was acquired by the then Peak Park Joint Planning Board, and in 1980 it became the Monsal Trail. The trail runs between Blackwell Halt and Coombs Road, Bakewell, with the majority being on the track bed. To the southeast of Bakewell the track bed was re-incorporated into Haddon Estate.

The Monsal Trail is to be safeguarded unless a satisfactory replacement is provided (as detailed in Structure Plan Policy RT2).

The Structure Plan assumes 'a net environmental benefit would arise from the re-opening of the railway', a position which is critical to the Authority's continued support for the project

The **High Peak Local Plan** emphasises the importance of (economic) growth through sustainable development. It sees a safe and efficient transport system as an essential component of this goal. Government policy (and by inference the Local Plan) promotes better integration between transport and other environmental and economic concerns.

The High Peak Local Plan has several policies which support the principle of reinstatement of currently disused railways including specific reference to the Buxton – Matlock line .

The **Derbyshire Dales Local Plan** (Deposit Draft 2002) supports the development of tourist attractions as a contribution to the economic development of the District, subject to a number of conditions which seek to minimise the impact on the character and appearance of market towns, key settlements and rural settlements.

Derbyshire Dales District Council's position is one of support for the reinstatement of the Matlock to Buxton railway and as such **Policy TR4** in the Derbyshire Dales Local Plan Deposit Draft seeks to ensure that no development prejudices the potential route that it would take. However the Derbyshire Wildlife Trust has now identified much of the former Rowsley Sidings as a Site Important for Nature Conservation and mitigation of the impact of reinstatement at Rowsley Sidings is quoted as a significant issue.

In summary, National, Regional and Local Policies are generally supportive of the re-opening of the line in principle although some polices on Environment – particularly in the Peak District National Park – constrain the form which a re-opened railway may take and set some specific parameters against which the benefits of a re-opened railway are to be measured.

4. EXISTING TRANSPORT SITUATION

4.1 GENERAL

The study, as explained in Chapter 1, is concerned with assessing the issues surrounding a possible re-opening of the railway. The study is not an area transportation study although many aspects of the existing transport infrastructure and public transport services in the area are pertinent to the development of rail proposals and the forecasting of the likely demand and economic effects.

This Chapter therefore reviews the highways and public transport network and its usage.

The principal road and rail network in the study area is shown in Figure 4 –1.

4.2 HIGHWAY

The main road artery in the study area is the A6, which runs from the Southeast to the Northwest of the study area, between Derby and Manchester. It follows closely the route of the proposed rail line between Matlock and Bakewell. North of Bakewell the road and rail corridors diverge slightly before meeting again approaching Buxton. The A6 is predominantly a twisting, single carriageway, road with frontage development along much of its length. It passes through – rather than bypassing - many of the principal settlements in the area

The A6 suffers from traffic congestion, particularly at weekends and the Derbyshire Local Transport Plan highlights this as a significant problem in village and town centres along the corridor.

Other principal routes passing through the study area are the A515 and A623. Other than the above roads, the study area is criss-crossed by a number of secondary and minor roads.

The study area is 'boxed' by the M1 and M6 motorways (to the east and west, respectively) the A50 dual carriageway to the south and the M62 motorway to the north. The A50/M6 route is principal route for regional road traffic between the East Midlands and North West.

Car parking within the Peak District National Park is of particular importance as it provides access to many of the tourist attractions and to the recreational uses of the Park itself. There are numerous car park providers in the Park including the Peak District National Park Authority, water companies, the National Trust and private owners. The policy and objective of each differ. The charging policy varies between owners and locations.

4.3 PUBLIC TRANSPORT

4.3.1 Bus

Most bus services in Derbyshire are operated commercially, but many – especially in rural areas, and more generally, in the evenings and on Sundays – could not run without the financial support provided by Derbyshire County Council. This financial support is currently in the order of £4.5 million a year.

The bus network provides what could be considered good geographical coverage of the study area with many routes having frequencies of, typically, 5 or 6 services a day or more.

In particular, along the A6 corridor, Trent Barton buses operate their limited stop 'TransPeak' service between Nottingham and Manchester. There are currently 8 through services per day although it is

proposed to increase the frequency with financial support from Derbyshire County Council. The Transpeak service operate via Derby City Bus station, which is approximately 15 minutes walking time from the railway station (albeit a frequent bus service connects the two). As a result, potential integration with existing rail services is less than ideal.

Consultation with Trent Barton Buses has identified that service reliability and journey time are heavily influenced on a daily basis by road congestion between Hazel Grove and Stockport. Within the study corridor, road congestion in Bakewell is considered (by Trent Barton) as being transient – occurring only on peak tourism days. The Transpeak service carries approximately 5600 passengers per week.

The southern end of the A6 corridor benefits from additional services provided by the R61 service between Bakewell and Derby.

4.3.2 Rail Services and Network

Existing relevant rail services can be considered in four distinct categories – southwards from Matlock, northwards from Buxton, the Sheffield – Chinley – Manchester corridor and, for wider East Midlands to North West flows, by other routes.

South from Matlock

The branch from Matlock has a service of 13 passenger trains a day (Monday to Saturday) in each direction, with all trains running to Derby calling at all intermediate stations including Duffield and Belper (on the main line between Ambergate Junction and Derby). The services are predominantly operated by Central Trains, with a single daily service operated by Midland Main Line. Some of the services run through to/originate from Nottingham or other locations. There is a Sunday service of 7 trains at roughly two-hourly intervals. The journey time from Derby to Matlock is, on average, 31 minutes.

Approximately 310,000 passenger journeys are made each year, with the trend being one of slight decline since 1998[1] mainly due to service unrealibility (which has now been resolved).

North from Buxton

The train service from Buxton – operated by First North Western - comprises 21 trains a day creating a basic hourly service with some additional peak hour services. Services operate to/from Manchester Piccadilly via Stockport and Hazel Grove, with intermediate calling points at Middlewood, Disley, New Mills Newtown, Furness Vale, Whaley Bridge, Chapel-en-le-Frith, and Dove Holes. At present most of the services are linked in with a second service group from Manchester to Preston and Blackpool, and operate as through Buxton to Blackpool services, though this may change in the future. Some services omit calls at selected intermediate stations. There is an hourly Sunday service and the journey time from Buxton to Manchester is approximately 45 minutes

Approximately 806,000 passenger journeys are made each year , with the trend being one of growth since 1998[2].

[1] Source, Rail Industry CAPRI data.

[2] Source, Rail Industry CAPRI data.

Sheffield – Chinley – Manchester corridor

Inter-urban services on the Sheffield to Manchester route operate at a frequency of 2 per hour for much of the day. To the west of Chinley these are normally routed via Hazel Grove and Stockport. An additional 'local' service (two hourly on weekdays and hourly at weekends) operates between Sheffield and Manchester calling at the intermediate stations (including Chinley) on the Hope Valley Line and is routed via New Mills Central and Ardwick Junction.

The corridor is also used by regular freight services throughout the day.

Other routes/journey opportunities

Additionally rail journeys can be made between centres in the East Midlands (including Derby) and Manchester (and the wider North West) either by direct services or by changing trains at Sheffield or Chesterfield. The principal journey 'opportunities' are summarised in Table 4-1 below:-

Table 4-1 Rail journey opportunities East Midlands to North West

				Number of changes of train required		
From	**To**	**Route**		**None (i.e. direct service)**	**One**	**Two**
Nottingham	Manchester	via Sheffield	No. of trains per day	15	6	4
			Av. Journey time (hr:min)	*1:56*	*2:24*	*3:31*
Manchester	Nottingham	via Sheffield	No. of trains per day	16	9	1
			Av. Journey time (hr:min)	*1:46*	*2:27*	*2:27*
Derby	Manchester	via Sheffield or Chesterfield	No. of trains per day	1	31	1
			Av. Journey time (hr:min)	*1:31*	*1:53**	*2:09*
Manchester	Derby	via Sheffield or Chesterfield	No. of trains per day	0	29	0
			Av. Journey time (hr:min)		*1:37**	
Leicester	Manchester	via Sheffield	No. of trains per day	9**	26	5
			Av. Journey time (hr:min)	*1:48*	*2:31*	*2:34*
Manchester	Leicester	via Sheffield	No. of trains per day	9**	25	7
			Av. Journey time (hr:min)	*1:44*	*2:27*	*2:23*

Source: National Rail Timetable Summer 2003

* The difference in journey time between the two directions of travel are the result of different waiting time for connecting services in each of the directions.
** These services are the current 'Project Rio' services – direct St Pancras – Leicester – Manchester – procured by the Strategic Rail Authority to provide an alternative rail service whilst West Coast Route Modernisation disrupts the Manchester – London Euston route. This service is due for withdrawal in 2004.

4.4 PUBLIC TRANSPORT INTEGRATION/TICKETING/PROMOTION

Public transport in the corridor (and in Derbyshire generally) benefits from a range of initiatives including:-

- The 'b-line' initiative to encourage young people to use public transport.
- Production of joint timetable booklets showing services of all operators and all modes.
- Joint ticketing arrangements – including the Derbyshire Wayfarer – which allows use on both bus and train services.

4.5 SUMMARY

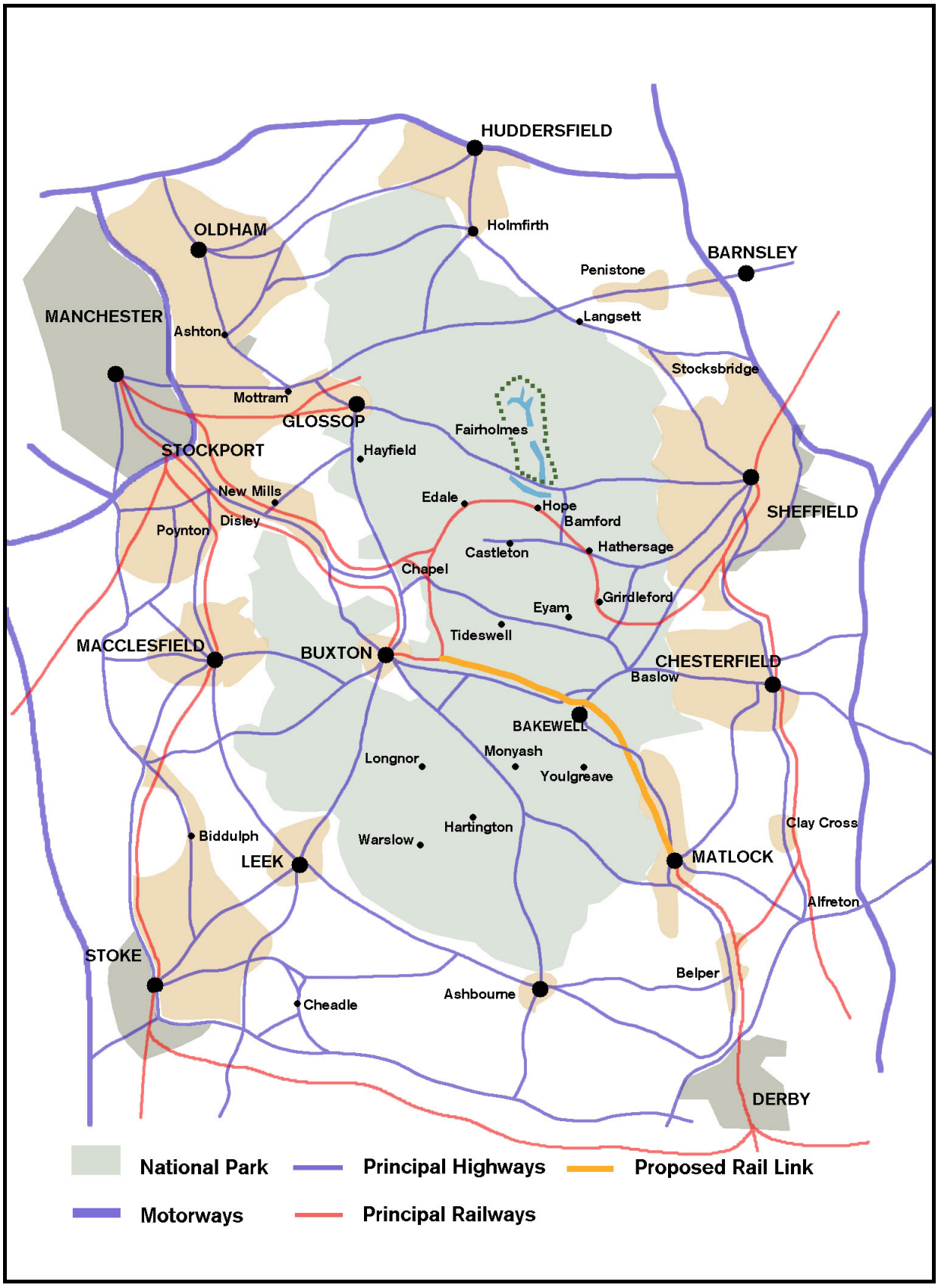
The highway network suffers congestion at times – particularly during the peak tourist seasons.

Within the study corridor, public transport – particularly bus – provides reasonable geographic coverage. Longer distance bus journeys – to Manchester or Derby – have extended journey times and potential reliability problems due in part to road congestion outside of the immediate study area. The Transpeak service is predominantly used for shorter distance (local) journeys and provides only limited inter-regional travel opportunity.

In an inter-regional context existing rail services offer significant journey opportunities (both in terms of the daily number of services and the journey time) between the East Midlands and North West. Use of these services is however likely to be suppressed due to the need to change trains (with inherent reliability and overall journey time issues) and, possibly, the perception of the journey ambience resulting from the type of rolling stock used for many of the services.

The ability to access the Peak District National Park by rail is limited by the current form of the rail network and the services operated. The Hope Valley Line, which crosses the National Park from east to west, is the only rail route actually within the National Park. It is used by residents travelling to Sheffield and Manchester and by visitors to the National Park. Rail passengers arriving by train at either Buxton or Matlock have to use other forms of public transport beyond these railheads to reach the National Park itself. Use of these routes to access the National Park is therefore limited. However both railways (to Buxton and Matlock) are used by visitors to Buxton itself and to the many tourist attractions within the Derwent Valley south of Matlock.

Figure 4-1 Road and Rail Networks in the study area



5. TOURISM PERSPECTIVES

5.1 GENERAL

To assist in the identification of issues and strategies which may contribute to future demand for rail services the study has taken an overview of existing tourism and possible future trends. A detailed audit of existing tourism destinations is contained in Volume 1B.

5.2 BACKGROUND

Reports on the Economic Impact Assessment of tourism for the three district councils in the Study Area (Amber Valley, High Peak, and Derbyshire Dales) were completed by the Heart of England Tourist Board utilising the 'Cambridge Model' that has been developed to make use of local level information.

Using each of these three (district) reports, the data has been interpreted to determine approximate figures for the study area.

A summary of these assessments are provided below:-

- in 2000 there were **c7.84 million visitors** to the study area generating **£287.1 million** for the local economy
- visitor market comprises **1.16 million** overnight visitors and **6.68 million** long leisure day visitors
- overnight visitors spent a total **of 2.85 million** nights and spent **£136.1 million**
- day visitors spent **£151 million**
- the accommodation sector received an income of **£41.5** million from visitor spending. Retailers **c£68.4** million and catering **£97.1** million.
- The model suggests that **c £34.8** million is spent on entertainment/leisure/and attractions

5.3 TOURIST ORIGINS AND TRENDS

Assessment of where tourists originate from has been difficult due to lack of data. However, The State of the Park Report 2000 (Peak District National Park) provides some general information from estimates made in 1996.

These estimates (for the whole of the National Park) indicate that:-

- In 1996 there were 22 million 'recreational visitor days' spent in the Park. (Note, that this does not mean individual visitors – one person visiting for 5 days would count as 5 recreational visitor days). We have calculated that this equates to approximately 15 million actual visitors per year.
- 65% of this figure represents day visitors. These day visitors predominantly originated in the Counties which lie partly within the National Park.
- 'Staying' visitors mainly came from the Home Counties and the Counties immediately adjacent to the National Park
- 87% of all visits were car based.
- There was little evidence of any change in total numbers of visits to the National Park during the 1990's
- 80% of all visits were repeat visits.

5.4 TOURISM BASED RAIL TRANSPORT IN STUDY CORRIDOR

There is little data available relating to use of rail for tourism purposes (either to reach the area or whilst in it). The information that is available has been derived from the Peak District National Park Visitor Survey 1998 prepared by the Heart of England Tourist Board (HETB):

- 2% of all visitors arrive in the Peak District National Park by train (this figure is higher for touring visitors at 5%, and overnight overseas visitors at 4%)
- 1% of all visitors used the train whilst within the Peak District National Park; with use being lowest for day visitors (less than 1%) and highest for overseas visitors staying overnight (4%).

Our assessment is that these figures are, possibly, optimistic given the total number of visitors per year to the National Park and may have been influenced by the locations of the survey (which are not known).

5.5 EAST MIDLANDS TOURISM STRATEGY

During the period of this study a first draft East Midlands Tourism Strategy[3] has been published by the East Midlands Development Agency (EMDA). The strategy is a 'high level' document with aims and aspirations rather than delivery strategies. The document contains little detailed assessment and sets no targets. It does, however, state that '*for example, a Manchester to Derby Rail link would be a major help towards sustainable tourism in the Peak District'*.

5.6 TOURISM SUMMARY

The overall assessment of tourism issues is made more difficult by the lack of up to date and comprehensive survey data .

However, the overall level of visits to the National Park appears to show no particular trend toward growth or decline. The contribution of tourism to the local economy, at around £37 per head per day for staying visitors, is significant.

The overall modal split for rail borne tourism is low at 1 to 4% (and even this may be overstated) compared to a national average of 7%. This is not altogether surprising given the limited extent of the rail network providing access to the National Park, the high percentage of day visitors and the predominance of visitors originating close to the National Park boundary.

There is currently no specific single area wide strategy for developing (increasing) tourism in the study corridor – although clearly individual organisations and groups of organisation have such aspirations. Increasing total visitor numbers is not necessarily, however, viewed favourably by all sections of the community. In particular, 'honey potting' in a number of areas can cause difficulty and environmental dis-benefit.

The Tourism Audit demonstrates that there are a significant number of tourism attractions – additional to the National Park itself – close to the corridor of the proposed railway. Many of these are outside of the National Park boundary but require journeys across the National park to access them from centres of population.

[3] Locum Consulting, August 2003

Within the context of tourism, a rail service through the corridor would potentially:-

- Have a limited effect in achieving modal shift (from road to rail) for many of the existing day visitors due to the short distances involved and, more specifically, the geographical origins of the visitors.
- Create significant opportunities to extend the catchment area for visitors. By the nature of the longer distances, these visitors are more likely to be stay overnight rather than visit for the day and hence contribute more to the local economy.
- Offer an opportunity to distribute visitors better within the corridor thus easing honey potting.
- Create the potential to allow visitors from the North West to access the Derwent Valley Mills World Heritage Site with minimum environmental effects to the Peak District National Park.
- Similarly, create the potential to allow visitors from the East Midlands to access Buxton and its environs with minimum environmental effects to the Peak District National Park.
- Enable the further promotion of tourism to areas within and adjacent to the National Park on a sustainable basis.

6. DEVELOPMENT/REGENERATION

6.1 GENERAL

Many railway re-opening proposals are developed on the basis of the re-generation or other development benefits which arise.

The study has therefore evaluated the demand and supply of housing and employment sites in the three local authority areas that would be directly impacted by the reinstatement of the Matlock to Buxton/Chinley railway - High Peak Borough Council, Peak District National Park Authority and Derbyshire Dales District Council.

Figures, information and opinions provided have been compiled from the three relevant Local Plans, the Derby and Derbyshire Joint Structure Plan (which sets the strategic policy framework for the entire county), and discussions with personnel at the local authorities.

By the nature of the time horizons of these plans and policies, information is only generally available until approximately the year 2011- before any railway might open. However, it is suggested that existing policies are unlikely to change significantly beyond this date in their general approach to housing and other development.

6.2 HOUSING

Within the Derbyshire Dales District provision of 3100 dwellings is required in the period 1991 to 2011 (based on the Derby and Derbyshire Structure Plan) , to be distributed across the three recognised sub-areas of Derbyshire Dales, which are Matlock/Wirksworth, Ashbourne and Derby. For Matlock/Wirksworth (which is the area of relevance to this study) the current situation is that, against a Structure Plan requirement of 1500 homes, 1098 have been completed, 127 are under construction and permission exists for a further 856. There is therefore, already, an over provision. In these circumstances development that increases the likelihood of further residential growth is unlikely to be favoured.

At the northern end of the study corridor, the Derby and Derbyshire Joint Structure Plan sets a housing provision figure for the Buxton-New Mills sub-area of 3,500 dwellings for the period 1991-2011. 2,100 of these are for Buxton itself.

Housing policies in the Peak District National Park are primarily concerned with providing for local housing needs without damaging the Park's valued characteristics. The current population within the authority boundaries is 38,000, and has not changed significantly since 1981. According to the Peak District National Park Structure Plan the population can be sustained by allowing about 1,000 new houses to be built in the period 1991-2006. At this point approximately 1060 have been committed, of which over 800 have been constructed. It is anticipated that by 2006 a total of approximately 1800 dwellings will have been constructed, though this high rate is unlikely to be supported longer term.

The Peak District Local Plan makes it clear that residential development will only be allowed where it would: enhance the valued characteristics of the Park, is necessary for the purposes of forestry or agriculture, involves the conversion of an existing building, or forms part of the Bakewell Town Centre redevelopment process. National Parks are not subject to the same residential targets as other authorities, and even in 1996 when the Government set a target of 4.4million new homes in England and Wales by 2011 it was made apparent that National Parks represented a different scenario, hence the PDNPA has considerable powers to restrain residential development even in the face of high demand, if it is felt that such development would be harmful to the valued character of the Park. The

PDNPA make it clear that adequate local housing needs are being met under current policies, and no changes are required.

6.3 EMPLOYMENT LAND

The Derby and Derbyshire Structure Plan requires that provision be made for 20 hectares of land for business and industry in the Matlock/Wirksworth sub-area.

The High Peak Local Plan identified approximately 24.15ha of land for employment development in 1991. The proportion of this that could be considered 'within the rail corridor' is not determinable. An assessment of land in March 2003 for the East Midlands Regional Assembly Monitoring Statement shows that since the adoption of the Local Plan a total of 4.97ha of employment land has been developed in High Peak, only 0.2ha of which is brownfield development – this site is on Ashbourne Road in the heart of Buxton. Generally employment development in the sub-region has tended to be on urban fringe sites, most of which are currently in the process of being developed. In the earlier years of the Plan employment land take-up was slow, and consequently the number of sites earmarked for development still considerably outnumber those in use. In their Monitoring Statement the East Midlands Regional Assembly has identified a further 45.71ha of potential employment sites, comprising 30.86ha of brownfield land and 14.85ha of greenfield sites. There is considerably more land identified by the Regional Assembly, than in the original Local Plan despite the recent slow take-up although these new designations will stretch beyond 2011 (the life of the current Local Plan).

In the Peak District National Park three sites are earmarked for employment development outside of Bakewell These provide a total of 2.9 hectares of land. Within Bakewell there are two sites – Ashford Road (1.6 ha) and land adjoining the Cintride factory (0.75 ha) earmarked for general industry or business development in Bakewell. The 5 hectare Lumford Mill is also earmarked for industrial/business redevelopment, alongside other uses.

6.4 SUMMARY

Population increases in the study corridor will be limited by planned housing provision and restraint on further development. Similarly, new employment opportunities within the study corridor appear to be limited by the land available for such development. However increased employment opportunities may arise from more intensive use of existing sites of employment, in particular those related to servicing of the visitor/tourism trade.

In the context of employment, the railway would improve access to employment opportunities to the north west and south east of the corridor.

7. MARKET RESEARCH AND PUBLIC CONSULTATION

7.1 GENERAL APPROACH

During the study a programme of consultation has been carried out with stakeholders and the public. The purpose of this has been, variously, to :-

- Obtain additional data for the study
- Identify the views of a number of organisations with respect to the study, its objectives and its methodology.
- Identify views of the public generally
- Keep the public informed of the progress of the study
- Obtain market research data to assist in developing solutions.

Consultation and communication has taken a number of forms including:-

- A Project Reference Group (See Section 1) established by the client
- Market research
- Meetings, telephone conversations and written communication with various groups
- A public roadshow at eleven locations
- Project Newsletters produced and distributed by the client
- The Derbyshire County Council Citizens' Panel
- Derbyshire County Council 'b-line' magazine and web site

7.2 PUBLIC CONSULTATION

7.2.1 Roadshows Interviews/ Questionaires

Overall there is strong public support for the concept of railway re-opening:-

- The majority (79%) of respondents at the roadshows and 'via the web site' supported re-opening of the line.
- Support from the group of 'random' recruits was highest in Bakewell (92%) and Buxton (88%).

However in some cases this support is tempered by a number of factors:-

- Concern regarding the potential cost of the scheme – and the belief that the capital cost could be spent in other ways that would be of more benefit to the local community.
- Concern about the environmental effects – and, in particular, the loss of the Monsal Trail.

Objections to the proposals was strongest in some communities along the proposed route – in particular Rowsley , Bakewell and Millers Dale. The main reasons for objection were:-

- Effect on personal circumstances (noise, property values, etc)
- General Environmental effects
- Loss of the Monsal Trail

7.2.2 Citizens' Panels

The Citizen's Panels each consist of 1000 members of the public in each of the District Council areas. These groups are invited to provide views, by completing questionnaires, on a range of issues each year. During the study the opportunity was taken to invite comments on the proposed railway.

Overall support for the re-opening of the railway was 76% in the Derbyshire Dales District, 74% in High Peak and 68% in Amber Valley.

7.3 STAKEHOLDERS

The consultation process with stakeholders has principally taken the form of two Project Reference Group meetings and a series of meetings with individuals and organisations supplemented by correspondence. As might be expected with a large number of stakeholders representing a variety of public and personal interests, the views that have been expressed range from outright support to significant opposition. The process is fully reported in Volume 5. Three stakeholders may, potentially, have a significant impact on the delivery of the project and a précis of their current positions regarding the project are set out below:-

7.3.1 Peak Rail

Peak Rail will potentially be significantly affected, to the extent – in their own words – "*of possibly being pushed out of existence*" - by proposals to re-open the route as a part of the 'National Railway'. They have therefore made detailed representations of an 'alternative proposal' for operating a railway route through the corridor. A copy of their submission is included Volume 5.

Peak Rail's proposal centres around the concept of developing a 'Community Railway' in which they would play a major part. Key elements of their strategy are:-

- A terminus at Buxton – with no anticipated through service to/from Manchester
- Line owned by a 'development company'
- Existing Derby – Matlock services extended to Buxton
- Additional tourist trains (heritage rolling stock) operating on 'high days and holidays'
- Operation by mixture of paid staff and volunteers
- Several additional stations to those proposed by this study

Their strategy envisages a total capital cost of £35m, although no explanation has been provided as to how this figure was arrived at. Neither does their proposal explain how the 'community railway' would mesh with the national rail system in terms of design standards, particularly signalling. An operational subsidy is implied as being required.

7.3.2 Haddon Estate

The Haddon Estate own approximately two and a half miles of the trackbed. Three meetings have been held with Lord Edward Manners and his advisors. The Estate remains opposed to the principle of re-opening the railway on many grounds, including:-

- The potential effects on the historic hall and mediaeval Park
- Effects on the people and interests of the inhabitants of Rowsley

- Environmental effects throughout the route
- The belief that it will not relieve road traffic volumes
- The poor financial performance of the rail industry generally

7.3.3 English Nature/Derbyshire Wildlife Trust

Consultation with these organisations is reported in detail in Volume 6 (Environmental Assumptions and Constraints Report). Both organisations have significant concerns regarding the effects of re-opening on various Environmentally Safeguarded sites, including candidate Special Areas of Conservation , Sites of Special Scientific Interest and County Wildlife Sites.

7.4 SUMMARY

The market research, consultation and communication process has identified a wide range of opinions on the line re-opening proposals. In considering these opinions - particularly those of the general public – it must be borne in mind that they have been obtained at a relatively early stage of the study, when details of specific elements of the proposals were not available. In respect of the roadshows in particular, the opinions have been expressed in 'open' consultation - where anyone can express their views - rather than as a result of representative sampling.

Whilst a significant majority of those who expressed a view supported the proposed railway re-opening, the level of potential opposition is greater than might normally be expected for such a proposal. This is due, in part, to the specific characteristics of the route - its environmental sensitivity and the effects on the Monsal Trail.

If the project proceeds, application for an Order under the Transport and Works Act 1992 will, ultimately, be necessary. Based on the current knowledge of the views of stakeholders, special interest groups and the public, a significant number of objections can be anticipated. Further detailed consultations will be required in advance of seeking such an Order.

8. OPTION IDENTIFICATION (PASSENGER)

8.1 GENERAL APPROACH

When considering options for provision of railway passenger services it is commonly necessary to adopt an iterative approach with the key variables of service level, demand and infrastructure being 'juggled' around the broader issues of environment, cost, risk and economics until a 'best fit' is achieved. This process is shown diagrammatically in Figure 8-1 below.

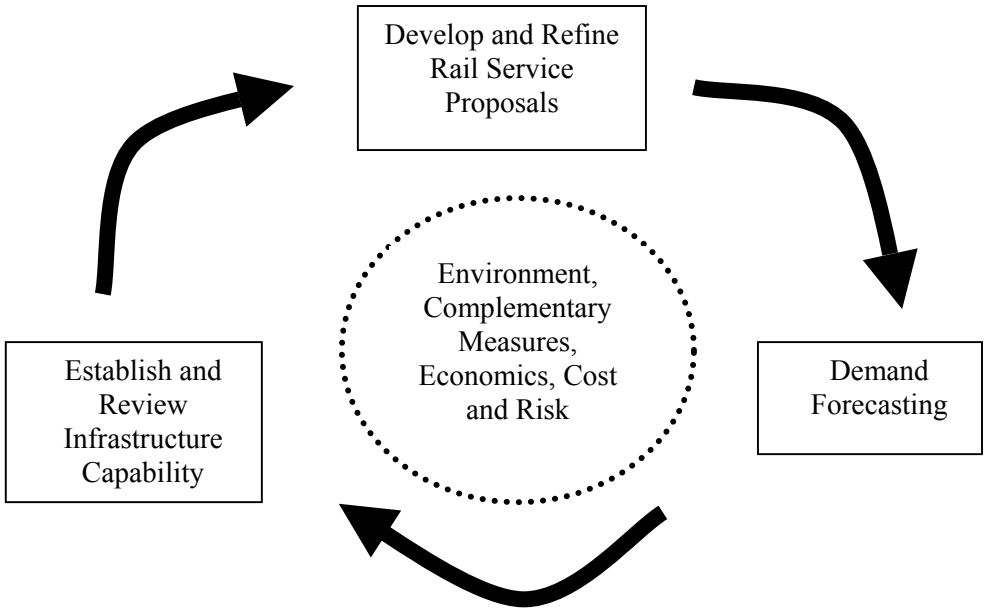


Figure 8-1 The Trade-off process

The process is further influenced by consideration of the practical issues of operating a railway service including:-

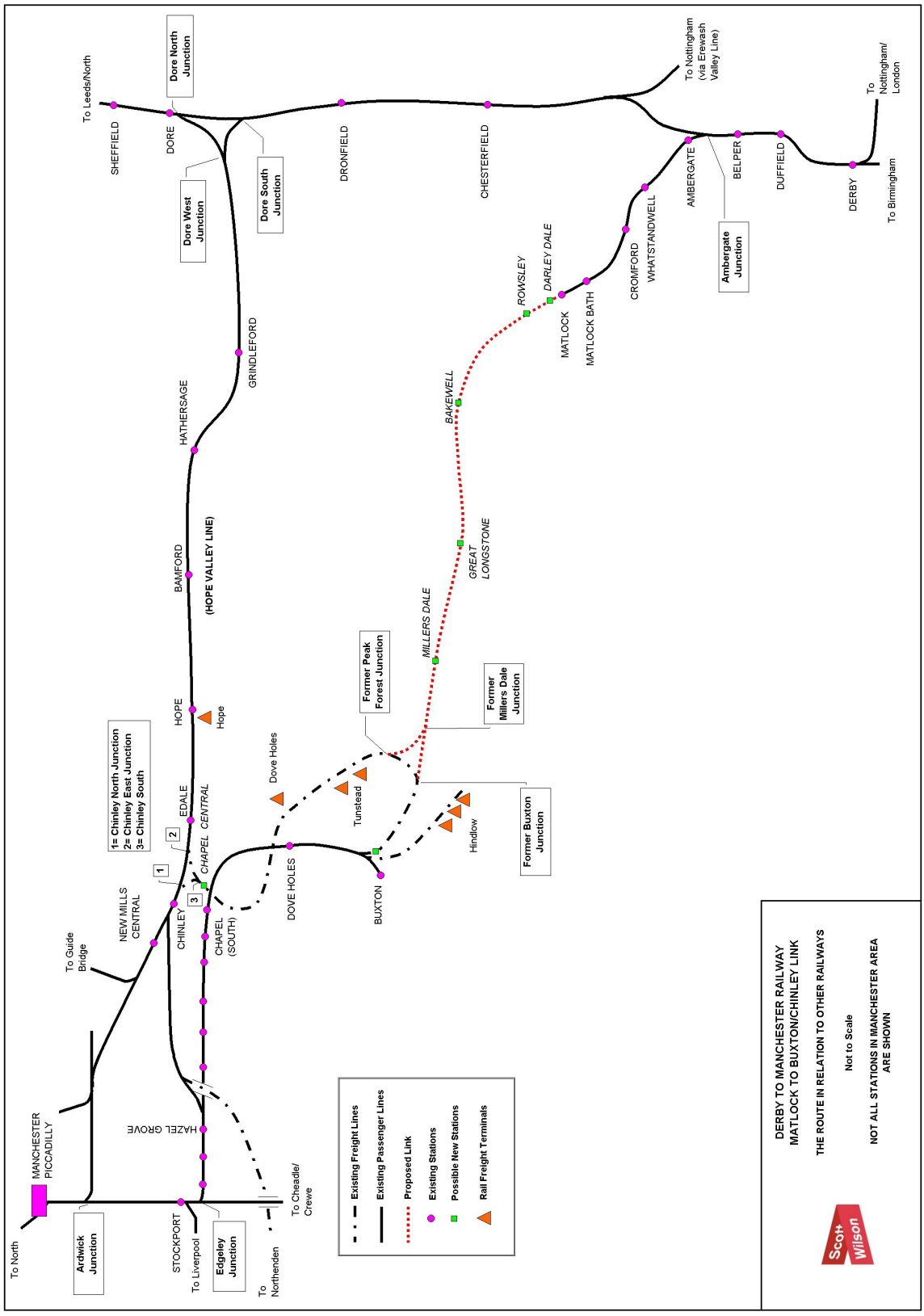
- Integration of services into the wider rail network
- Practicalities of the diagramming of rolling stock and train crews

8.2 ROUTE CHOICES

In the case of this project the choice of route was dictated by the stated intention of re-using a former railway alignment, albeit that, at the north end of the corridor, there were options of operating services either via Buxton or via Chinley. The 'fixed' nature of the overall route also dictated to a large extent the choice of possible station locations. A diagrammatic route map is provided in Figure 8.2.

If services were to be routed via Chinley, a further sub-choice of routes exists between Chinley and Manchester. This study has assumed that the route via Hazel Grove and Stockport would be used. It is the quicker route and has the benefit of serving Stockport – a location which is developing as a public transport hub for the south of Manchester conurbation

Figure 8-2 –Area Rail Diagram



8.3 MARKET IDENTIFICATION

The study brief identified two specific types of service that might operate over the route. These were:-

- A regional service between Manchester and the East Midlands and possibly beyond.
- A local stopping passenger service to improve links to and from communities on the line of the route.

By observation of the proposed route, the area through which it passes, its relationship to areas of populations and the existing railway network, a number of potential markets for rail travel were identified:-

- Inter-regional traffic – principally between the East Midlands and the North West
- Commuter traffic - principally from the study corridor to Derby and Stockport/Manchester but also some flows into or within the corridor to Matlock and Buxton.
- Leisure, education and shopping trips within and to outside of the corridor.
- Visitor (tourist) flows – seasonal in nature and with the need to distribute throughout the corridor. Predominantly out of peak hour periods.

The ability to serve each of these markets – and influence the size (demand) of the market depends on a number of factors including, principally, service frequency, journey time and cost. The journey time element is also partially dependent on whether or not any change of train is required.

8.4 DEVELOPMENT OF SERVICE CHARACTERISTICS

8.4.1 Infrastructure constraints and assumptions affecting service characteristics

The key constraints and assumptions emerging from detailed consideration of infrastructure and existing railway operations were:-

- The existing Buxton to Manchester route is ‘aged’ in railway infrastructure terms (over much of its length) and has evolved to meet the demands of the existing services over it -(i.e hourly, local trains). This status quo was assumed to remain since upgrading to higher line speeds was likely to be expensive and offer few benefits
- The existing railway layout at Buxton features a terminus station, which is not situated on the alignment of the route to Matlock. Ideally, for overall journey time reasons, a new station would be required to allow trains to pass through – without the need to reverse direction. The geometric and topographic characteristics of the route were likely to create challenges in achieving this.
- The section of existing (freight) railway between Buxton and Peak Forest is single track and enhancement works (such as double track) would create a ‘step change’ in cost.
- The existing railway in the vicinity of Manchester has significant capacity problems even with the current service. It was therefore concluded that any new services operating over the Matlock to Buxton route should be ‘designed’ to ensure that whenever possible no additional train paths were required into Manchester. Further, notional timetabling of services as part of this study would assume that proposed services operated in existing train paths between Manchester and Stockport. This is considered a ‘conservative’ approach since the capacity are likely to have been resolved in the timescale of this project
- Similarly, at the south end of the route, between Ambergate and Derby, the railway infrastructure was considered to remain as exists today.

- The need to carry out enhancement works to the existing single line between Ambergate and Matlock would create a 'step change' in cost. Conversely, if this section of route remains un-enhanced the overall capacity of the route is reduced.
- The need for robustness in timetabling was seen as paramount. On a railway connected to busy networks at both ends (as this route would be), flexibility would be required to maintain service reliability in the event of disruptions occurring outside of the immediate area. This was likely to be achieved by maximising the length of double track sections of railway and installing additional signalling (over and above the absolute minimum requirement).
- On the alternative route via Chinley, the critical issue was the nature of the railway between Peak Forest and Chinley, where the existing methods of operating and signalling the route are incompatible with regular passenger train operation. Significant works would be likely to be required to overcome these issues.

8.4.2 Infrastructure and Operations Assessment

The assessment of infrastructure and operations – reported fully in Volume 3 – suggested the following, which influenced the specification of passenger service options:-

- The horizontal geometry of the corridor dictated that – realistically - a maximum speed of 75mph was likely on the re-opened section of route.
- Train performance calculations showed that the difference in journey times between stopping and semi-fast services and between infrastructure with a maximum speed of 50 or 75mph was comparatively small.
- As a result, times for journeys between Derby/East Midland and Manchester via this route were likely to be only slightly faster than those achieved by existing rail services using existing routes. However, some further demand benefit would arise as the need to 'changes trains' en route would be avoided.
- A solution to Buxton Station was, as anticipated, difficult to determine. It remains a significant risk to the project and is reported fully in Volume 3. For the purposes of developing train service characteristics a station on the direct line to Matlock was assumed.

8.4.3 Station Locations (Catchments)

Stations are costly elements of railway infrastructure – additionally, services incur an overall journey time penalty for every station call they make. In any railway re-opening proposal, therefore, a careful assessment of the need to provide stations has to be made.

The identification of potential – and consideration of existing - station sites was therefore made against a number of criteria:-

- Centres of population
- Potential reasons for use – local population, tourism
- Land availability
- Acceptability in respect of modern design criteria – track curvature, gradient and ability to provide mobility impaired access.
- Access

The predicted demand on an individual 'station by station' has not been determined at this stage – rather, overall rail passenger numbers have been aggregated over the route as a whole. Future development would need to identify flows to and from individual stations. This would assist in the specification of appropriate facilities.

The existing stations between Derby and Matlock and between Buxton and Manchester were assumed to remain operational and to have no lesser service than they currently enjoy, in the event of the re-opening scheme proceeding.

For the section of route between Matlock and Buxton, potential new stations have been considered at a number of locations, as discussed briefly below:-

Darley Dale

Darley Dale is currently a station on the Peak Rail 'heritage line' and, as such, much of the station fabric already exists but would need to be updated. The location is satisfactory to serve the residential areas of Darley Dale and Darley Bridge, with good road access.

Rowsley

Rowsley potentially offers the advantages of serving the local residential area (both work and leisure journeys) and the tourist traffic (via linked bus services). Nearby Chatsworth House with over 400,000 visitors a year would be a prime destination for such a link. The former station site also has opportunities for a small car park. However, it could be argued that Darley Dale – only a short distance south along the A6 could also serve the Rowsley area.

At this stage of project assessment a station at Rowsley is proposed accessed via Old Station Close (NB This is not the existing Peak Rail station site).

Bakewell/Hassop

Bakewell and the surrounding area (Baslow, Youlgreave , Ashford in the Water) clearly need to be served by the railway. Two broad choices exist – based around the former station sites at Bakewell and Hassop.

Whilst the former station site at Bakewell, is not ideally situated in relation to the town centre, Hassop is further removed from Bakewell and would be likely to encourage 'car based' access.

The former Bakewell station is, therefore, considered the best location to serve this area of population and to provide a gateway for tourist. A (mini) bus link with the town and surrounding areas would be required to maximise use of the station. Bakewell is likely to be the most used station on the line since it will serve a large residential population and is a significant tourist destination.

Great Longstone/Monsal Dale

To help deliver one of the project objectives – improved public transport access into the Peak District National Park – a station in the Great Longstone/ Monsal area is highly desirable.Two choices appear to exist - Great Longstone and Monsal Dale. Both are sites of former stations.

The former halt in Monsal Dale was located in a particularly remote situation, accessible only by foot along a narrow, steep lane from the valley bottom. The Great Longstone site offers the additional benefit (over sites in Monsal Dale) of being able to serve the village of Great Longstone. Much of the station fabric is also still in place, although would require upgrading.

The Great Longstone site is therefore preferred at this stage of project development.

Millers Dale

Similarly to Great Longstone, a station in the Millers Dale area is desirable in helping to meet the tourist/visitor element of potential traffic. The former station site offers the only practicable location for a station in the area and has the opportunity to serve the local communities of both Tideswell and Taddington. The position is also suitable for recreational use in accessing the local footpath network

For services operating via Chinley, the additional opportunity exists for a station at Chapel en le Frith. The site of the former Chapel Central station has therefore been identified as the best location in terms of land availability and proximity to the town centre and areas of residential development.

8.5 SERVICE SPECIFICATIONS

Consideration of the above issues led to the development of four passenger service options for assessment of demand, capital and operating costs. These were 'lower' specification and a 'higher' specification service levels and speeds with service operating either via Buxton or the Chinley route. In practical terms these patterns may varied to suit particular market needs. For example, situations can be envisaged where specific services may make additional station calls at certain times of day to facilitate school travel or tourism demands.

8.5.1 Low Specification Service Pattern

This was based on an hourly service operating in each direction between Derby and Manchester.

For services via Buxton (Option 1A) trains would call at all stations between Derby and Manchester, thus maintaining (or slightly improving) service levels at the existing stations.

For a route via Chinley (Option 2A) all stations between Derby and Chinley would be served (including Chapel Central). Between Chinley and Manchester it has been assumed that only Hazel Grove and Stockport would be calling points. The existing Buxton to Manchester services would be unaffected by this option and are assumed to continue operating as currently.

The journey times were based around a 50mph maximum speed on the Ambergate to Buxton (or Chinley) section and existing linespeeds elsewhere.

8.5.2 High Specification Service

The higher specification superimposed an additional hourly 'semi-fast' (limited stop) service in each direction onto the 'all stations' services described above.

For the route via Buxton (Option 1B) the semi- fast (limited stop) service on the Buxton route would serve Derby, Belper, Matlock, Bakewell, Buxton, then, Hazel Grove, Stockport and , Manchester Piccadilly.

For the service via Chinley (Option 2B) the stations served would be Derby, Belper, Matlock, Bakewell, Chapel Central, Chinley, then Hazel Grove, Stockport and Manchester Piccadilly.

The journey times for all services were based around a 75mph maximum speed between Ambergate and Buxton (or Chinley) and existing linespeeds elsewhere.

9. OPTION IDENTIFICATION (FREIGHT)

9.1 GENERAL APPROACH

Freight use of a reopened Derby – Manchester route via Matlock is considered to arise either from traffic diverted to the route because it offers operational advantages, or because the route opens up new markets that cannot be easily exploited at the moment.

The approach taken has been to review existing freight operations in the area and examine the current route and capacity constraints.

Consultations have been carried out with freight operating companies (FOCs), Network Rail and the Strategic Rail Authority, and principal aggregates firms operating in the Peak Forest area surrounding Buxton. During the consultations commercially confidential information specific to each freight user has been provided. In each case the participants involved offered this information on the understanding that specific details would not enter the public domain. It has been possible, however, to use the information to draw overall conclusions which are reflected within the remainder of this section.

From information provided during the consultation process the likely freight use of the line has been estimated under optimistic and pessimistic scenarios.

The assessment is incremental to the previous Peak Line Freight Demand Study produced for Derbyshire County Council by Sinclair Knight Merz (SKM) in January 1999, which has been used as a starting point. However, whilst the basic facts reported by SKM remain valid, many aspects of the railway industry have changed in the last five years and these changes are reflected in the updated usage forecasts set out in this section.

Unless otherwise stated where reference is made to "outward loaded services" these will be balanced by a corresponding number of return empty services. Thus a quarry output of 4 trains per day will equate to a total of 8 train movements a day.

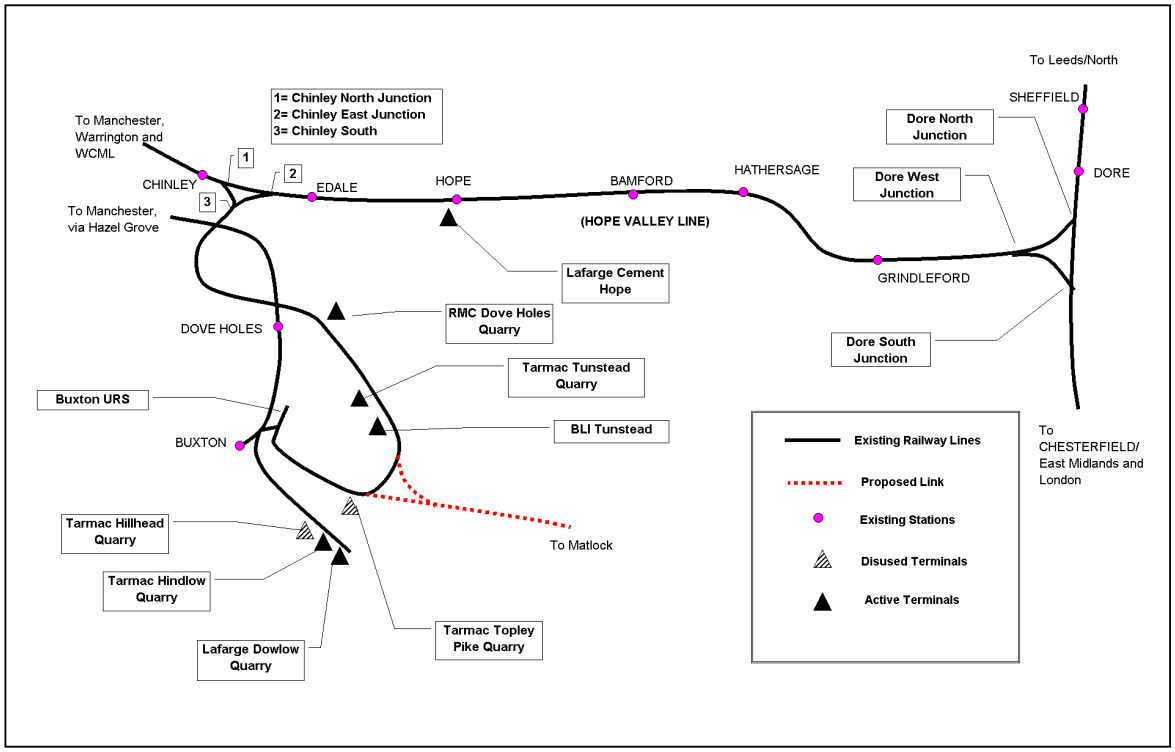
9.2 EXISTING INFRASTRUCTURE CAPABILITY FOR FREIGHT

At present considerable freight traffic is forwarded from the Buxton area, all of it aggregates based and mostly in trainload quantities. There is no freight activity originating from the south end of the route between Ambergate and Matlock, and this review therefore concentrates on freight operations at the north end.

Figure 9.1 shows the freight infrastructure and location of the various forwarding terminals in the Buxton area.

Most aggregates traffic forwarded from the Buxton area runs to destinations in the North West, and is not considered in detail as part of this report as it is unaffected by the route reinstatement proposals. The principal route constraints in the area for freight traffic to the south and east are the gradient of the routes (which affects the load which can be hauled), overall route capacity (the ability to fit freight trains in amongst the passenger service) and the track layouts at Chinley, Dore Junction and Buxton.

Figure 9-1 Passenger and Freight Infrastructure in the Buxton Area



All these constraints are well understood by Network Rail and the SRA. The route operates successfully on a day-to-day basis, but because of the above constraints operating freedoms are relatively limited and delays to freight traffic can occur, even if trains are only running marginally late.

At present, while none of the quarry companies have been refused paths to new destinations or for additional services, the potential for further growth is constrained. Network Rail has confirmed that there are no additional daytime paths available on the Hope Valley route eastwards via Dore.

The existing hourly path is the only viable path given the level of passenger services. However there is a view that up to 30% of the daily total of freight paths are not used, or are used by short trains, and Network Rail does believe that this gives an opportunity to make more efficient use of the capacity that is already available. This inefficiency arises principally because services only run to certain terminals 1 or 2 times per week, or because paths are held for contingency purposes to cope with unforeseen traffic disruptions or peak traffic requirements.

Network Rail believes that there is sufficient capacity on the route in the medium term (within the next 10 years) for all anticipated traffic flows.

The Strategic Rail Authority has however identified a number of relatively modest initiatives that would increase route capacity. The SRA consider that provision of a Sheffield bound freight loop at Edale, at the summit of the route, and the chord line at Dore, would allow longer trains than the current 380m limit to be run . Their target is to achieve a loop length of 580 metres, capable of holding trains with a trailing length of 535 metres. This would then become the standard permitted length on the route.

The SRA concur with the Network Rail view that initiatives of this kind will be sufficient for traffic requirements in the medium term.

Quarry companies are however much less optimistic that this is the case. They point out that a major operational constraint on the timing of their train services is the restrictions placed on their destination distribution terminals. Obtaining permission for a new terminal is difficult to achieve, and most are restricted to operate in daytime hours only, and therefore trains have to arrive at the start of the working day. This in turn leads to a peaking of services at Chinley, with outbound loaded services leaving in the early morning, and empty return services run in the evening. Quarry companies believe that it will become increasingly difficult to secure paths for new services to new locations that would also have to observe the same constraints.

They also point out that one of the principal constraints to train length is the length of reception sidings at terminals, which often cannot be easily overcome. They are less optimistic therefore about the value of increasing permitted train lengths elsewhere on the rail network as a means of increasing haulage capacity. Their view is that the overall number of available train paths has already become a constraint to growth.

9.3 CURRENT RAIL FORWARDINGS

At present the only traffic which uses the Hope Valley route in either direction which could possibly benefit from a reopened route from Matlock to Buxton consists of aggregates from the Buxton area, or cement from the nearby works at Hope. All this traffic arises from the following facilities, listed in order from North to South:

- Hope – Lafarge Cement
- RMC – Dove Holes Quarry.
- Tarmac – Tunstead
- Lafarge Dowlow

9.4 MARKET EXPECTATIONS - AGGREGATE

In meetings with the freight operators and principal aggregates forwarders, estimates have been produced for the changes expected to take place over the next 10 - 15 years, into the timescale of the opening of a reopened line.

Given the timescale of the project, it is extremely difficult to forecast potential traffic levels in 10 years time with any degree of accuracy. At best, the forecasts offered by the quarry companies represent their best estimate of how the market will appear, and depend on a number of general assumptions about “the state of the market”, the overall consumption of new aggregate materials, the state of the economy generally; and the share of rail transport against road.

However the construction industry operates on a relatively long term basis, and there is broad agreement within it as to what is expected to happen to the overall aggregate market and the potential opportunities for each company.

The consensus across the industry is that the overall UK market for new aggregate will be slightly reduced in 10 years time from the present levels of consumption. This is because government initiatives to promote the recycling of construction waste will increase, while industry will continue to develop ways of using raw materials more efficiently than today. The feeling is however that the overall national demand for new stone will be only slightly lower than today, assuming that the general level of economic activity is maintained.

What is however expected to change is the location of sources of raw aggregate. Companies envisage a continuing trend onto larger production facilities with good transport connections and large consented reserves to give a long-term justification for major investment decisions.

In this respect the quarries in the Buxton area operate at a major competitive advantage compared to other locations. Here the quarries tend to be extremely large, with long term consented reserves. Rail and road facilities are generally good, with few fundamental constraints on modal choice.

Smaller local quarries are expected to be run down in favour of these large facilities, and the firms expect there to be a growth in demand for aggregate from the Buxton area into both the East and West Midlands as a result.

All firms operating in the Buxton area have aspirations to increase their market share of the London and South East market. However transport cost is a large portion of the retail price of aggregate, and all the quarry operators in the Buxton area are conscious that the cost of rail transport is a crucial factor. They are concerned to find operational economies where they can be exploited, principally though either running longer trains or running them quicker and using resources more intensively.

In this respect the capacity constraint imposed by the Hope Valley route is a concern to all three quarry companies, and they would favour a reopened Buxton – Matlock route built to accommodate freight traffic. They would use a reopened route in preference to the Hope Valley line where feasible.

They see the new route as offering distinct advantages in better route capacity, favourable trailing loads because the route would run downhill and the steep rising gradients imposed via Edale would be avoided, while running time would be an average 45 minutes per train shorter. There is consensus among the firms that the route would create greater market opportunities in the south of England and the Midlands as a result, and that new traffic flows would be created, as well as the diversion of existing traffic routed via Edale.

Following this the individual quarry companies have discussed specific forecasts to a variety of destinations via Bakewell, which it is not appropriate to repeat in this general report because of issues of commercial confidentiality. However in summary, the most optimistic scenario outlined by each firm for forwardings on the route in 10 years' time is as follows:

Tarmac

- 1 existing service per day rerouted from the Hope Valley
- 2 new services per day

RMC

- 2 existing services per day rerouted from the Hope Valley to run via Bakewell
- 2 new services per day

Lafarge

- 3 new services per day

In general these new services would be operated within the overall portfolio of traffic flows from each location, using the same wagon sets and locomotives as efficiently as possible. However because of the constraints imposed by the operational requirements of destination terminals, which generally operate during daytime periods only, it could be envisaged that most of the outbound traffic would be in the morning between approximately 03.00 and 10.00 and the return traffic would be in the afternoon between 15.00 and 22.00.

In the same way as happens now, trains would run to specific locations on nominated days per week, and therefore more paths would be required than would be used on a daily basis. Careful management of path usage would be required to keep the overall number of paths required down to a sensible level.

Both SRA and Network Rail have indicated that they believe that the Hope Valley route has capacity to accommodate these additional trains, and that they are not therefore dependent on the opening of the new route. However the quarry operators firmly believe that the operational constraints imposed by the Hope Valley route will impact on both operational costs and the suitability of available paths, and would elect to use the new route if it was available to improve their operational flexibility.

9.5 OTHER MARKET EXPECTATIONS

9.5.1 Refuse

The quarry operators consulted, and EWS, have discounted the prospect or refuse traffic, on the grounds that the environmental impact would be too great, while the limestone strata are not suitable for dumping of domestic waste without risk of contamination of watercourses through the porous nature of the rock.

The prospect for movement of domestic or industrial waste products into the Buxton area has therefore been discounted from our evaluation.

9.5.2 New local flows

The SKM report investigated the potential for new traffic to or from other customers in the Matlock, Bakewell or Buxton areas, and concluded that there was little viable prospect for such a development. This conclusion has been reviewed as part of the Study, together with looking at the principal firms in the area, and it has been determined that this conclusion is still valid. No firm has sufficiently large inwards or outwards volumes that could present rail potential, while there is insufficient overall traffic to justify the establishment of a general freight terminal in the area.

9.5.3 Intermodal traffic

Intermodal traffic consists of containers and swap bodies (demountable units which can be loaded onto rail wagons for trunk movement and then transhipped to road vehicles for local delivery). In general, containers are ISO units shipped from Asia, United States and more distant locations and landed at east or south coast ports and then moved to inland terminal locations. EWS and Freightliner operate major terminals at Manchester and Leeds. Swap bodies move directly through the Channel Tunnel by rail to a variety of UK destinations. EWS serves terminals at Manchester and Wakefield.

For both these traffics the restricted UK rail structure gauge, which is smaller than the European standard, poses a major constraint, as it limits the size of containers that can be carried. The SRA has a strategy to increase the rail structure gauge on selected routes to W12 gauge to overcome this and has concentrated work on the East and West Coast Main Lines, which serve the major industrial areas such as Yorkshire and the North West. W12 gauge will permit the movement of 9’ 6” (2.895m) high containers and 2.6m wide Swap bodies on normal platform height rail wagons.

The existing Network Rail routes in the Derby and Buxton areas have not been cleared to this larger gauge, neither is it Network Rail’s or SRA’s intention to do this, as they perceive that no business case exists which would support the cost involved

The routes in the Buxton area, including the Hope Valley route, are cleared only to Network rail's W7 gauge, and in the Derby area only to W8 gauge. This is inadequate even for present day container movements, and because of the long tunnels present on the routes in both locations the cost of increasing this would be extremely high.

As a result of this, there is no expectation that a reopened route could be used for intermodal traffic, or indeed that there is any possibility of carrying out infrastructure works to improve the position into the long term.

The possibility of intermodal train movements on the route has therefore been discounted.

9.5.4 Wagonload traffic

EWS has stated that it has no intention of altering the current nodal yard arrangements, and that it intends to service the Manchester and Buxton areas from Warrington in the long term. There are no Enterprise flows into the East Midlands at present, though if there were new opportunities they would probably be served from Bescot (Birmingham). EWS also believes that there are no major opportunities for industrial chemical traffic that they can economically secure beyond the existing feeder service capabilities.

The prospect of through wagonload services using the route in the future therefore seems unlikely, and has been discounted from this report.

9.5.5 Other through trainload traffic

Network Rail and SRA have confirmed that they do not believe that there is any significant potential for a growth of through trainload services using the route in preference to the existing routes, and EWS has confirmed that it supports this view.

The possibility of additional flows of through trainload traffic on the route has therefore been discounted.

9.5.6 Use for Diversions

Network Rail has pointed out that – operationally - a reopened route would ease the considerable problems of meeting engineering requirements in the Manchester area and on the Hope Valley route. The volume of traffic on the Hope Valley and the need for the route to be available continuously during the week poses considerable problems for Network Rail, and there is currently difficulty in obtaining possessions to accommodate the level of renewals required to achieve the required track condition on the route. A reopened Derby to Manchester route would allow greater possibilities to close the route at defined intervals to carry out midweek night or weekend maintenance. Use of the line for this purpose would probably be on an occasional basis.

9.6 TRAFFIC FORECASTS

From the above details it is possible to construct an optimistic and pessimistic forecast for freight use of the line in 10 – 15 years' time.

The optimistic forecast depends on the following assumptions:

- The aggregates forwarders' assumptions on volume growth being realised.
- Buxton area quarries will secure new markets and substitute some of the volume currently supplied by rail from the Somerset area
- Suitable new terminal sites in destination areas such as the South East, West and East Midlands and East Anglia become available
- The market for new aggregate remains near the current level
- Economic activity (which drives major construction projects) remains at or exceeds current levels

The anticipated daily traffic would be:

Traffic Flow	**No of loaded trains per day**
Hindlow/Dowlow - Ambergate	3
Peak Forest - Ambergate	7
Total	**10**

The pessimistic forecast arising from:-

- South East demand being met from elsewhere (either continued Somerset production, Leicestershire area granite quarries or imported stone)
- New terminal sites in destination areas such as the South East, West and East Midlands and East Anglia limited by availability and planning restrictions
- The market for new aggregate declining at a greater than anticipated rate over time.

In this instance it is anticipated that traffic growth would be much more modest and potentially more local in nature with growth possibly being restricted to the Midlands and more flows representing simple traffic substitution for existing rail flows.

Nevertheless it is anticipated that there would still be use of the line for new flows with the anticipated daily traffic being:-

Traffic Flow	**No of loaded trains per day**
Hindlow/Dowlow - Ambergate	1
Peak Forest - Ambergate	3
Total	**4**

Note that the loaded trains per day would give rise to similar number of returning empty trains.

9.7 CONCLUSIONS

There are already some flows of traffic, principally from RMC at Dove Holes, which would be diverted onto this route if it were opened - it is therefore concluded that under all circumstances there would be demand for a freight capability on the route.

The Hope Valley route is already relatively constrained, and the availability of new paths is extremely limited. Additional capacity can only be achieved by rationalising current train paths. Routing this way imposes constraints in terms of both trailing loads and maximum permitted length, which limit the viability of freight traffic.

Quarry companies expect that in the next 10 years opportunities will develop for new traffic flows from the Buxton area to London and the South East, the East and West Midlands and East Anglia, due to reduced supply from existing sources. The Buxton area quarries are ready to exploit these opportunities, and view a reopened line as offering significant benefits in terms of better path availability and the ability to run longer and heavier trains.

Potential obstacles to such growth are a lack of suitable destination terminal sites, competition in destination areas from other sources of stone including imports, or a significant economic downturn.

The predicted range of usage of a reopened line by aggregates trains ranges from a high estimate of 10 loaded trains per day, to a low estimate of 4 loaded trains per day. A 'tidal flow' of loaded trains leaving in the early morning and empty trains returning in the evening is predicted.

It is not likely that intermodal, wagonload or other trainload traffic would use the route. The possibility of domestic refuse traffic using the route is also discounted.

It was determined to examine the implications of providing capacity for freight services by assessing the passengers options identified in the previous chapter with the addition of one freight train path per hour in each direction. These are referred to as

Option 1C = Passenger Option 1A plus freight
Option 1D = Passenger Option 1B plus freight

Option 2C = Passenger option 2A plus freight
Option 2D = Passenger option 2B plus freight.

10. COMPLEMENTARY MEASURES

10.1 BACKGROUND

As stated in the project brief "*The project should be seen as a complete integrated transport package, with the new railway at its core rather than simply the reopening of a disused rail line. For it to be a success it will depend on a range of complementary measures such as road traffic management, supporting bus services and improvements for pedestrians and cyclists*".

Complementary Measures can, potentially, maximise the wider benefits arising from the construction of the rail link. They are seen to influence the degree of 'modal shift' which can be achieved and can reduce social exclusion for those without private transport. The measures may be designed to influence tourists, local residents or those travelling through the corridor and may take many forms including :-

- Other public transport links –bus or taxi based
- Car Parking at stations
- Park and Ride facilities
- Provision for cyclists
- Provisions of walkers
- Ticketing
- Information Provision and signage
- Car Restraint
- Marketing Initiatives
- 'Hearts & Minds' initiatives

All may be part of an overall strategy. Each will have a different cost of implementation and effect on overall demand for rail services. Delivery of complementary measures can also present challenges as a result of funding mechanisms and policy constraints.

Each measure is considered in further detail below.

10.2 OTHER PUBLIC TRANSPORT LINKS

As noted in Chapter 4, the study area has a reasonably good geographic spread of timetabled bus services. However, in many cases, co-ordination and integration with rail services will be difficult without increases in service levels. This is particularly true for longer distance rail journeys, which tend to require early morning and late evening connections with rail services. Further complications can arise from conflicting aims of a bus service – i.e re-timing existing bus services to suit rail connections can make the bus service less suitable for other local purposes.

The enhancement of the daily (regular) bus network may not, therefore, be the most appropriate (or economic) solution – especially for early morning or evening services – at which times some form of demand responsive bus network may be better.

An extensive Community Bus system already operates in Derbyshire including dial-a-bus, demand responsive transport and other accessible transport services. We would envisage this system being developed in conjunction with a new rail link.

Taxi- buses may provide specific enhancements in the more populated areas - an example of such a service is the use by Chiltern Railways of a successful Taxi Bus network radiating from Bicester station.

The needs of tourism create different challenges – and opportunities - characterised by seasonal and weekday/weekend variation and peaks in demand.

If the proposed railway is to fulfil a significant role in both encouraging new tourism and helping to 'distribute' existing visitors these challenges will have to be met.

Consideration should therefore be given to the provision of specific services to operate at the times of heaviest demand such as Weekends or Bank Holidays.

In the study corridor many possible options for such services can be envisaged. In particular such services could be used to 'stitch together' the proposed Matlock to Buxton route with the existing Hope Valley line to the north.

Examples of possible routes are: -

- Rowsley (or Bakewell) -Chatsworth-Baslow-Eyam-Grindleford (on Hope Valley Line)
- Bakewell – Ashford – Taddington- Millers Dale- Tideswell – Hope (on Hope Valley Line)

Whilst the costs of providing bus services can be significant, these can be mitigated by use of the Community Bus concept, targeting of services to specific periods of the day/year, introduction of new routes in a staged manner and integrated marketing to maximise usage/revenue.

10.3 CAR PARKING AT STATIONS

For many potential rail users from within the corridor, the concept of 'integration' will mean 'being able to drive and park a private car to the station'.

A balance – which is often difficult to achieve - will therefore need to be struck between catering for this demand whilst not encouraging significant levels of additional car journeys – especially longer distance ones. Every station is likely to require some degree of car parking provision and this has been included in the calculation of the capital cost of the scheme.

Whether or not station car parking should be free or charged for will depend on factors such as the location (especially in relation to town centres or other 'attractions') and the need to encourage the use of other modes for travel to the stations. The assumption should not, however, be to cater for car parking demand 'at any cost'.

Within the study area the location specific issues in relation to car parking are likely to be:-

- At Ambergate, Whatstandwell, Cromford and Matlock Bath no changes from the current situation are likely to be required.
- Matlock Station – with its proximity to the town centre – and limited land availability in the 'post superstore construction/A6 diversion' situation is likely to have to rely on the general public parking in the area.
- At Darley Dale, land for significant car parking provision may be difficult to achieve – unless use is made of the siding areas currently occupied by the Peak Rail sidings. If car parking is provided it is suggested that imposing charges is likely to result in increased 'on street' parking.
- At Rowsley, very limited car parking could be provided in the vicinity of the station itself. Further consideration would be needed to identify any opportunities or conflicts arising from the large area of free parking associated with the Peak Outlet Village.
- Bakewell station has potential for car parking provision, and its remoteness from the town centre is such that charges would probably not be required to prevent use by non-rail users. Charging for parking would need to be considered in conjunction with introduction of parking controls in the nearby residential street.
- Great Longstone is likely to generate some demand from the nearby village and some car usage will arise. There is no former car parking and either 'on street' parking will have to be accepted or a small car park provided.

- Millers Dale station is likely to have a 'shared facility' with parking for tourism to the immediate area – the car park is currently operated by the Peak District National Park. A charging policy is likely to remain required therefore.

10.4 PARK AND RIDE FACILITIES

Park and Ride operations can come in many different forms. However, most seek to encourage use by providing a frequent service of public transport to the passengers ultimate destination.

To operate successfully, a number of features would be needed including :-

- Location in an area where demand is significant and where existing road flows might be 'intercepted' without requiring significant 'detours' by the motorist.
- Use of, preferably, an existing station - additional station construction specifically for park and ride is unlikely to be economic.
- A frequent rail service – or a shared operation with a bus based scheme.
- Possible 'restraint' on alternative transport options to discourage car use to final destination.
- Association with a strong marketing policy and ticketing initiatives.

In the corridor a number of alternatives have been considered:

To the north of the study area:-

- It would be possible to use (at weekends) the existing car parking facilities at stations such as Hazel Grove. However, this location is some way to the north of the corridor and would probably only be attractive to the 'south of Manchester' area.
- The new station proposed at Chapel Central as part of the option for services running via Chinley offers some opportunity for Park and Ride, being reasonably close to the A6.
- Buxton Station is considered too far 'into' the corridor and its location suggests that encouraging car traffic to a Park and Ride type facility would be counter productive.

To the south of the study area:-

- Derby Station offers some possibilities although this would result in potentially attracting more car trips into the City to access the station.
- An alternative - development of facilities at Ambergate - has been suggested by some consultees. However, Ambergate suffers from a shortage of suitable land and a less than ideal road network, although it would serve to 'intercept' car traffic on the A610/A6.

The success or otherwise of a Park and Ride concept will probably depend on the level of rail service operated. A basic service – say, hourly in each direction – is unlikely to be attractive to potential Park and Ride users due to the effect on overall journey time. This may be partially overcome by combining a rail based 'park and ride' with bus services into the National Park.

The cost of Park and Ride facilities can be high, particularly if high quality and secure car parks are provided. We have not recommended the specific development of any rail based Park and Ride sites as an initial line re-opening strategy.

10.5 PROVISIONS FOR CYCLISTS

Cycling as a means of accessing stations should be encouraged, although in many areas in the corridor, the local topography is challenging for this activity and may therefore limit its use. Secure storage facilities at stations should however be provided.

The carriage of cycles on modern trains has become more difficult in recent years as new rolling stock has been designed without traditional 'guards vans'. This has led to train operating companies introducing restrictions on cycle carriage on most services. This is a national issue, however, and services in this corridor are likely to suffer from the same difficulties.

Cycle hire (already available at many locations) is therefore seen as a more reliable method of satisfying demand for recreational cycling by visitors to the area. Were the line to re-open, encouragement would be given to cycle hire companies who wish to locate at stations.

Costs of implementation of such a strategy are low.

10.6 PROVISION FOR WALKERS

In a similar manner to cycling, walking can be considered in two distinct situations.

- Access to stations by footpath should be actively encouraged by signage and the implementation of measures to assist personal security, such as provision of lighting.
- Recreational walking – linked to use of the railway - can be promoted by ensuring the local footpath network and redesigned Monsal Trail are served by stations and supported by the provision of information, guide leaflets, signage and ticketing promotions.

Costs of implementation are low but potentially can generate additional revenue for the railway.

10.7 TICKETING

Ticketing strategies – especially as part of a wider marketing strategy – can play a useful part in encouraging rail usage. These strategies can take many forms including:-

- Integration with other public transport – both through ticketing and interchangability. Trent Barton Buses and Central Trains already operate an interchangeable ticketing arrangement between Matlock and Derby. The 'Derbyshire Wayfarer' is a Day rover ticket that can be used on almost all buses and trains in Derbyshire and to some towns outside the county:
- 'Package' ticketing with the price of the ticket giving discounts on tourist attraction entrance fees
- Local Resident Travel Cards - often based on 'postcode' areas. Cards offer reduced travel costs at off peak times and can also be used as a marketing tool in connection with other special offers.
- Circular/Ranger tickets – in conjunction, for example, with the Hope Valley Line and connecting bus services.

The cost of implementation is low to moderate depending on the scheme chosen. Properly implemented ticketing arrangements can be used to increase income at times of lower demand.

10.8 INFORMATION PROVISION AND SIGNAGE

Lack of relevant information, or difficulties in finding the information, can often lead to under use of public transport.

Whilst there are government initiatives to establish country wide public transport information systems, local measures are also required. For this corridor, these include:-

- Establishing and maintaining local Travel Information at railway stations
- Establishing and maintaining a focal point for public transport information in all local communities even if some distance from the railway
- Ensuring details of public transport are included in publicity for tourist attractions, tourist accommodation, etc

In a similar way to information provision, the implementation of good signage can encourage use of rail by improving user confidence and generally drawing attention to the presence of the rail facility in the locality.

10.9 ROAD TRAFFIC RESTRAINT MEASURES

The whole issue of road traffic restraint measures has been much debated in past years at national and local level. The consideration and recommendations have to be set against the background the 'deliverability' of these measures in political or practical terms. Different forms of measure may be required to achieve an impact on different types of traffic (e.g through traffic or visitor)

Restraint on road traffic use can come from a number of strategies, including:-

- Introduction of general traffic calming measures – i.e reducing average speeds on through routes
- Restricting car parking availability at destinations
- Use of car parking charges as a regulator
- Introduction of forms of 'road pricing' – cordon charging or area charging
- For heavy goods vehicles, restrictions on width or weight on specific routes or sections of route

The A6 can be considered to be significantly calmed already with low average speeds resulting from its general alignment, traffic mix and specific measures already implemented over sections of its length. The conclusion is that little would be achieved by further calming. In particular, for heavy goods vehicles it is not the 'route of choice' for movements through the area due to the journey times and other restrictions. The majority of heavy goods vehicles that do use the corridor, have a destination or origin within the area.

It needs to be recognised that any restraints on car use may also have a detrimental effect on the local, or wider, economy if the resultant effect is a net reduction in visitors. This is particularly relevant in areas where visitors contribute significantly to the local economy and where potential visitors have other choices of destination available to them.

Restraint measures may therefore need to be targeted at specific (local) areas rather than applied over wider geographic areas.

We would, therefore, suggest that any road traffic restraint measures should be considered with caution since there can be no certainty that they are deliverable as part of the overall strategy. We have however examined – with the Demand Forecasting activity - the likely impact of increasing the general cost of motoring in the study area.

10.10 MARKETING INITIATIVES

The nature of the area – with its many opportunities for visitor based activity – would be well placed to capitalise on a whole range of marketing initiatives to maximise the use – and income - of a railway.

Typical initiatives would be :-

- Guided walks programmes
- 'Through the Window' guides for those passing through on trains
- 'Short Break' promotions – targeting, typically, ABC1 social groups in the North West, London and Home Counties.
- Cycle hire arrangements

Many of these initiatives are not entirely dependant on the railway being present. However, the presence of the railway would significantly increase the market base available.

10.11 'HEARTS & MINDS' INITIATIVES

These initiatives seek to persuade residents and visitors to modify their behaviour in respect of choice of travel mode and destination. They are likely to be seen as long term measures which can have some effect – albeit slight - on travel patterns. The benefit may be maximised when implemented in conjunction with increased opportunity to use other modes of travel, marketing initiatives, information provision and signage and, possibly, local restraint measures.

There is little conclusive evidence, nationally, as to how successful 'Hearts and Minds' campaigns are, although, conversely they can be low cost to implement.

10.12 CONCLUSION

There is a range of potential complementary measures which can be implemented to maximise the benefit from the development of the railway.

Few, in their own right, will have a fundamental effect on the economic assessment of the project and implementation would need to be based on in-depth planning and assessment of specific options at a later stage of project development.

Implementation will require co-operation between a number of agencies, and private and public bodies to maximise the effects and benefits.

Experience suggests that many will have only a small effect on overall demand for rail services and certainly would not alter the overall economic viability of the railway. The measures – either individually or in combination – do however offer the ability to maximise the environmental and social benefits of the railway.

11. A 'NON-RAIL' ALTERNATIVE

11.1 INTRODUCTION

The study brief recognised that whilst the principal objective of the study was to examine the issues surrounding re-opening of the railway as part of a wider integrated transport strategy, it would be necessary to review and assess alternative courses of action. The principal reasons for this are two fold:-

a) The Strategic Rail Authority – as part of their appraisal process – generally require proposals to be tested against 'non – rail' alternatives to ensure there is not a better 'value for money' means of achieving the same objectives.

b) At later stages of the project – for example during the Transport and Works Act process – it is likely to be necessary to show that consideration was given to alternative options.

Appraisal against a 'do minimum' – maintaining the status quo in terms of transportation provision – is also carried out.

A two stage process was therefore adopted - with possible alternative options being 'brainstormed' and then sieved to select a 'preferred' Non Rail solution for more detailed assessment.

11.2 CRITERIA

The criteria against which a 'non –rail' alternative might be selected are an essential pre-requisite and it was considered that the following documents provided guidance on this:-

- Regional Planning Guidance for the East Midlands (RPG8)
- Peak District National Park Structure Plan (PNPSP)
- South Pennines Integrated Transport Strategy (SPITS)
- Derbyshire Local Transport Plan (DLTP)
- Derby and Derbyshire Joint Structure Plan (DJSP)
- Multi-Modal Study into North-South Movements on the M1 Corridor in the East Midlands (M1MMS)
- South Pennines Transport Needs Study – Strategic Level Environmental Assessment of Selected Strategy Options (SPTNS)
- Traffic Restraint and Park-and-Ride in the Peak District National Park – Preliminary Study (TRPR)
- PPG9 – Nature Conservation
- National Parks and Access to Countryside Act 1949
- the broader objectives contained in Guidance on the Methodology for Multi Modal Studies (GOMMMS)

.

From these sources, the following objectives were identified as criteria against which other options might be sieved and subsequently, assessed.

Source	Objective against which assessment to be made
Study Brief	Providing links to/from local communities in the corridor
	Providing alternative inter-regional links (East Midlands to North West)
	Facilitating freight services
Peak District National Park Structure Plan	Transport Policy 3a – support for proposals to reduce cross-park traffic
	Transport Policy 3b – no new roads for cross Park traffic (except Bakewell Relief Road, policy 5b)
	Transport Policy 5b – Safeguard land for Bakewell Relief Road
	Transport Policy 6c- Safeguard land for Derby – Manchester Railway
	Transport Policy 7a – Encouragement of rail freight
	Monsal Trail – Requirement to retain or replace 'like for like'
SPITS	Reduce rate of growth of road traffic
Derby and Derbyshire Joint Structure Plan	Transport Policy 6b – support Derby to Manchester Railway
	Transport Policy 7 – provision and retention of facilities for rail freight
	Transport Policy 16 – protection of disused rail corridors
Derbyshire Local Transport Plan	The key themes of Better Travel Choice, Successful Local Economies, Better Managed Road network and Low Impact Leisure

Additionally issues such as practicability, deliverability and economics need to be considered.

11.3 ALTERNATIVE PROPOSALS

The alternatives which have been considered are:-

- Highway Construction
- Light Rail (i.e tram)
- Heavy Rail outside of the corridor
- Traffic Restraint
- Bus/Coach
- Heritage Rail

Each of these is discussed below:-

11.4 HIGHWAY CONSTRUCTION

The construction of any new highway would run contrary to a number of relevant policies:

- Peak National Park Structure Plan, Transport Policy 3(b), states that "[no] new road for cross-Park traffic will be constructed and with the exception of those schemes referred to in Policy T5 of this Plan, no existing road will be subject to major alteration, unless there is a compelling national need which cannot be met by any reasonable alternative means and which is demonstrated to be in the overall public interest, in accordance with Policy GS1." Policy T5, referred to here, lists a number of schemes for the A57/A628/A616 corridor, on the A523 and A623 and a potential A6/A619 Bakewell Relief Road.
- SPITS objectives (under Integration) specify making best use of the core Highways Agency (Trunk Road) network and limiting traffic growth on other roads.

Highway construction would, further, fail to help achieve many of the key themes of the Local Transport Plan.

On these grounds alone it can be dismissed as a viable alternative.

11.5 LIGHT RAIL

A light rail scheme would potentially be broadly compatible with most relevant policies. However, it would fail to deliver one of objectives of SPITS - Freight by Rail.

Construction costs for light rail are in the range of £12 - £18 million per mile for construction on dedicated 'right of way' – significantly more than for heavy rail. Construction outside of the railway corridor would increase the cost.

If light rail were built in the railway corridor, it would effectively block the option of future heavy rail and the 'footprint' would be much the same in terms of environmental effect.

Visual intrusion would also arise from the need to install overhead electrical power lines – there being no commercially successful diesel powered light rail system available.

Light rail would be unlikely to be constructed beyond the immediate Matlock to Buxton corridor, resulting in the need to change modes at these two locations. This would be a great dis-incentive to through journeys.

Light Rail is not, therefore, seen as a viable option.

11.6 HEAVY RAIL OUTSIDE OF CORRIDOR

Potential inter-regional rail traffic could be catered for by enhancements to heavy rail outside of the study corridor. Rail services between Derby (and the East Midlands) and Manchester–either direct or with one change of train – already offer a high level of frequency and there is no evidence of demand outstripping capacity. The key improvement that could be envisaged is, therefore, the operation of more direct rail services.

Rail investment outside of the study corridor could also improve capacity (principally on the Hope Valley Line) to accommodate future freight traffic growth. However, it would not offer a shorter route with better journey times for freight trains.

Rail development outside of the corridor will, however, fail to meet one of the key objectives of providing links to/from local communities in the corridor.

11.7 TRAFFIC RESTRAINT

Except in very exceptional circumstances traffic restraint measures are unlikely to be a solution in isolation. They are, rather, one part of an overall strategy and as such are discussed in more detail in the chapter on Complementary Measures.

Measured against the objectives, Traffic Restraint fails to deliver 'Freight by Rail', improvements in links to/from local communities or improvement in inter-regional links.

According to Traffic Restraint and Park-and-Ride in the Peak District National Park – Preliminary Study (TRPR) , traffic restraint is likely to have limited impact in reducing the level of growth of cross-Park traffic.

11.8 BUS

Bus service enhancements are a further element of the SPITS strategy. In common with traffic restraint they would clearly fail to deliver the objective of Freight by Rail or improvements in inter-regional links but they would not conflict with re-opening of the Railway at some later date unless they utilised 'dedicated right of way' which obstructed the railway formation. They would also potentially contribute to the reduction in traffic growth and would meet the objective of providing links to local communities in the corridor.

11.9 HERITAGE RAIL

Expanding the existing Peak Rail operation to serve the whole of the Matlock to Buxton line potentially delivers some of the benefits of National Rail operation. However, current regulations make the joint operation of heritage services and National Rail services on the same infrastructure difficult. It is likely, therefore, that such a situation would result in Heritage Rail operations being limited to the section between Matlock and Buxton to the exclusion of National Rail services over this section. Through journeys (south of Matlock or north of Buxton) would require changes of train.

Heritage Railways are normally operated over limited parts of the day and on a limited number of days per year.

In these respects they would fail to deliver the objectives of improved inter-regional links or improvements in travel choice.

A Heritage Rail operation alone would, also, potentially conflict with the Peak District National Park Local Plan, which states:

'The National Park Authority encourages the reintroduction of railways into areas they once served, provided that they can demonstrate a local need and a National Park benefit. Policy LT3 covers cross-Park railways. Proposals to construct railways purely as a tourist attraction are not viewed sympathetically and are likely to be refused because of incompatibility with recreation policies. Experience elsewhere indicates that a rail terminus is likely to generate additional road traffic, with demand for parking and other facilities. If the line is tourist orientated then this problem is likely to be even more acute. In the case of the Peak Rail proposals to re-open the Buxton to Matlock line as a tourist railway, the Joint Planning Board has taken the view that termini within the National Park would be unacceptable, except as part of a phased construction programmes. There is no reason to change this stance.'

Heritage Rail is not, therefore, seen as a practical alternative.

11.10 SUMMARY

From the issues discussed above, we have concluded that the most realistic ' non rail' option to consider is a predominantly bus – based strategy. This will not, however, meet all the key objectives – particularly the movement of freight. The benefits arising from a bus based solution will be on a totally different scale to those possible with a railway.

The form which this strategy might take is :-

- Enhanced bus services in the A6 corridor based around the existing Transpeak service. The most realistic service frequency is anticipated to be half hourly.
- New bus infrastructure similar to that seen in Quality Bus Corridors – modern bus shelters, real time information and higher quality buses
- Alterations to other bus routes and timings to provide interchange opportunities at principal locations along the route.
- Enhanced ticket inter availability
- Provision of some bus priority measures and dedicated bus lanes

Overall journey times – especially for longer distance journeys – are likely to be a dis-incentive to use – and compare poorly with corresponding rail journey times. It is difficult to envisage how bus journey times could be significantly reduced since they result from the general average speed of raod traffic, which in itself is related to overall road congestion.

Bus service enhancements are therefore likely to have little impact in capturing commuter or through traffic.

The only larger groups of passengers attracted to the bus option are therefore likely to be limited to those wishing to access the Park itself and taking advantage of packaged tickets for travel, attractions and/or accommodation. It is therefore unlikely that an improved bus service will result in the significant reduction of traffic in the Park.

12. ASSESSMENT OF THE RAIL OPTIONS

12.1 SUMMARY OF OPTIONS DEVELOPED

The variables of train frequency, stopping pattern, routeing and provision (or not) for freight led to the identification of 8 combinations of characteristics for detailed examination. These are :-

Option Group 1 – services operating via Buxton

Option 1A 'Low Specification' Passenger only service. Typically maximum speed 50mph with a frequency of one train per hour (stopping service) in each direction

Option 1B 'High Specification' Passenger only service. Typically maximum speed 75mph with a frequency of two trains per hour (one stopping; one 'semi-fast') in each direction.

Option 1C 'Low Specification' Passenger service as per Option 1A plus freight capability of one freight train path per hour in each direction.

Option 1D 'High Specification' Passenger service as per Option 1B plus freight capability of one freight train path per hour in each direction.

Option Group 2 – services operating via Chinley

Options 2A to 2D Similar to 1A to 1D above but with the services operating via the Chinley route rather than Buxton.

12.2 ASSESSMENT

12.2.1 General

A detailed report on the development process and its conclusions is contained in Volume 3. The main findings are summarised below.

12.2.2 "Via Buxton' service options

Option 1A determined the lowest level of infrastructure likely to be required. This concluded that a single track railway with double track between Matlock and Bakewell and at Millers Dale would be adequate although may limit timetable flexibility in the future. Freight in not specifically catered for and there is no connection to the Chinley Route north of Millers Dale Junction.

Option 1B required a significant 'step change' in the level of infrastructure with the need to double the existing line between Matlock and Ambergate Junction. Signalling and Operational Risk Assessment is, as a consequence, likely to require the remodelling of Ambergate Junction itself. Whilst developing this 'two train per hour' option it was noted that less double track would be required if the two services in each direction were spaced more closely together. However this would result in train departure times from the principal stations becoming bunched, with intervals between departures in the same direction of as little as 10 minutes, followed by a gap of 50 minutes. This was felt to be undesirable , and departure times were spaced more evenly, to achieve an approximately half hourly service from the principal stations. The proposed single track between Bakewell and Millers Dale Station would, however, create difficulties in coping with late running or additional services. As with Option 1A there is no link to the Chinley route.

Option 1C (the passenger service examined in Option 1A supplemented with a freight path in each direction) requires little additional infrastructure over that provided for in Option 1B. However, a link is required to the Chinley route north of Millers Dale for freight services..

Option 1D represents the most intensive service pattern examined. The two train per hour passenger (stopping and semi-fast) service of Option 1B is supplemented by the provision of a hourly freight train path in each direction, producing a basic service of 3 trains per hour in each direction. Double track is required throughout, with the exception of the section between Millers Dale Junction and Buxton.

12.2.3 "via Chinley" service options

These options 'mirror' the service specifications in Options 1A to 1D with the exception that the passenger services operate via Chapel –en-le –Frith and Chinley. There are no links provided between Millers Dale Junction and the Buxton route since no services are proposed to operate via Buxton. In each Option 2A to 2D, the layouts south of Millers Dale Junction are unchanged from the similar Option 1 layout.

The complexity of the existing freight service operation in the corridor between Peak Forest Junction and Chinley would have made detailed timetable modelling overly complicated for this level of study. It has therefore been assumed that these services can be re-timed in the corridor– if necessary - to accommodate the passenger services.

A further complication arises from the complexity of freight train movements to and from the terminals adjacent to the line. This has created difficulty in accurately assessing what additional infrastructure may be required to cater for this activity additional to through passenger services.

We have, therefore, made a number of judgements which we are confident represent the level of change/enhancement likely to be necessary whilst recognising that – if a Chinley routeing option is adopted – considerable additional development work would be necessary to develop workable proposals. These judgements are set out below:-

- Resignalling of the route will be necessary to make it 'passenger service' compliant.
- Existing loops for freight trains will require to be enhanced/lengthened on both sides of the line.
- The speeds into/ out of the loops will need to be enhanced to reduce overall line occupancy
- Additional crossovers between the main lines will need to be provided to increase operational flexibility.
- The single line section from Great Rocks to the former Peak Forest Junction will require to be double tracked.

The works on the Chinley Route are common to all options

12.2.4 Infrastructure

In addition to the track layout assessment of the infrastructure has included reviews of :-

- Line speeds and, hence, journey times
- Land availability
- 'Width of corridor'
- Structures under the line
- Structures (including tunnels) over the line
- Footpaths across and along the former line
- Signalling systems

Line Speeds/Journey Times

Assessment of the route alignment and proposed layouts has shown that the initial assumptions regarding a maximum line speed of 75mph are robust, subject to a few localised areas where a lower speed may be necessary.

The route speed profile has been used in conjunction with details of train performance and route gradients to determine likely journey times for different types of train.

The resulting assessed times for example journeys are shown in Table 12 – 1

Table 12-1 Approximate Forecast Rail Journey Times

Journey	**Approximate time for an 'all stations' service.**	**Approximate time for a 'limited stop' service.**
Derby to Manchester*	118 mins (1 hr 58 mins)	90 mins (1 hr 30 mins)
Derby to Buxton	60 mins (1 hr)	48 mins
Matlock to Manchester*	84 mins (1 hr 24 mins)	68 mins (1 hr 8 mins)
Bakewell to Manchester*	72 mins (1 hr 12 mins)	60 mins (1 hr)
Bakewell to Derby	41 mins	30 mins

** The times quoted are 'via Buxton'. However times 'via Chinley' are similar.*

Land Availability

The majority of the former railway corridor is currently in the ownership of either Derbyshire Dales District Council or the Peak District National Park Authority. Peak Rail own the viaduct over the the River Derwent at Rowsley and the two and a half miles from Rowsley to Coombes Lane (south of Bakewell) is owned by the Haddon Estate. The Haddon Estate – as reported elsewhere – is opposed to the re-opening proposal.

Individual parcels of land at Bakewell and Rowsley old station yard are in private ownership with industrial units constructed on them. At Harrison Way, Rowsley the former railway trackbed has been obstructed by construction of a high pressure gas regulator.

At Buxton a combination of land availability and railway design standards create a significant risk to achieving an acceptable solution. This is reported in more detail below.

A scheme has been developed to deviate the railway to the west of the gas regulator at Harrison Way.

However, at Rowsley Old Station Yard and Bakewell there is no suitable alternative alignment and therefore reinstatement of the railway would require the relocation of the industrial premises.

'Width of Corridor'

The former railway was double track throughout. However, modern standards for the provision of safe access and working conditions for maintenance staff have led to increases of (between 1m and 2m) in the width of the corridor required for a double track railway.

The study has therefore identified the works required to achieve this wider 'footprint', where reasonably practicable. This principally will involve, in places, slight widening of cuttings or embankments at rail level. On sections of the route where safe staff access cannot, practicably, be provided, it is proposed to control the risk by restricting or banning access to the line during times of

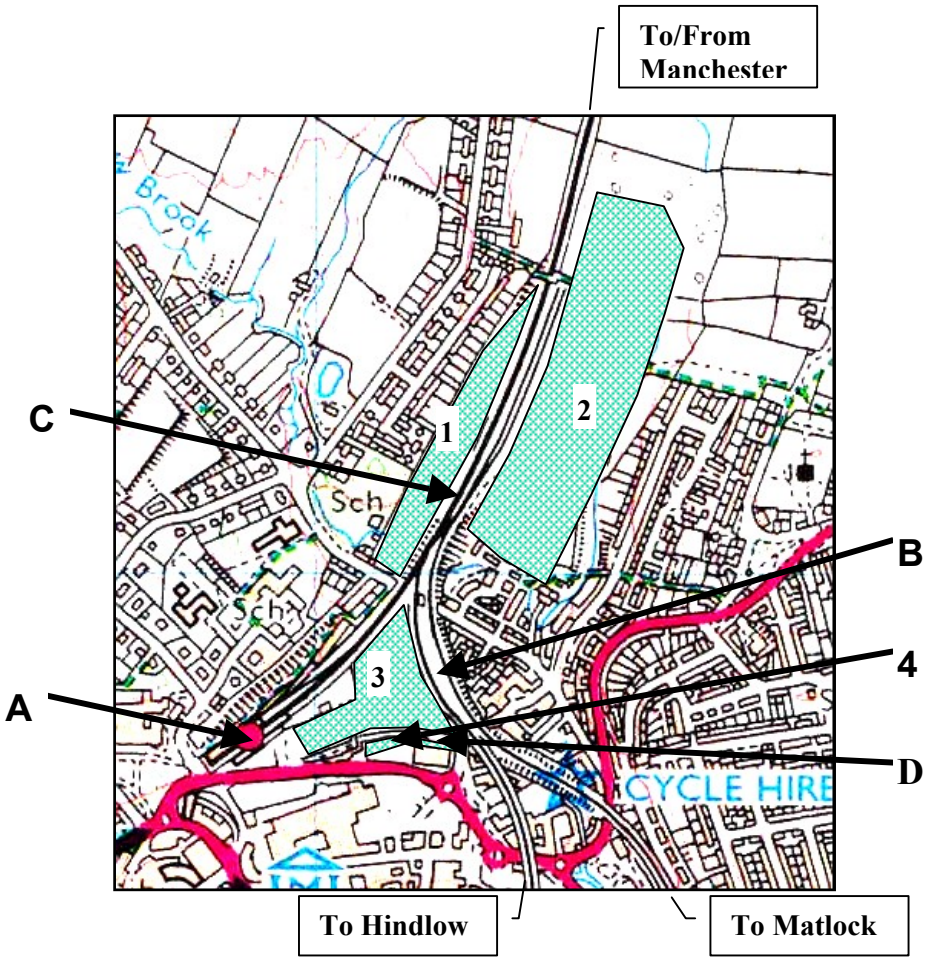
operation. This philosophy has been discussed with and accepted by Her Majesty's Railway Inspectorate (HMRI).

Buxton Station

Determining a new site for Buxton Station imposes a significant risk on the project. It is therefore reported in detail.

From a railway operation and journey time perspective a 'through' station is highly desirable. A number of potential sites and associated constraints were identified as indicated in Figure 12 – 1 below:-

Figure 12 – 1 Buxton Station Area (Copied under Licence - Ordnance Survey Copyright Reserved)



Location A is the existing station site. ***Location B*** is the preferred site for a new 'through' station from an engineering and operational perspective.
Location C is an alternative site – in engineering and operational terms - for a new 'through' station
Location D is the former Peak Rail station site and is unsuitable for a through service to Manchester.

Land Areas 1 and 2 are in private ownership and have outline planning consent for development.
Land Area 3 is owned by Peak Rail
Land Area 4 is owned and occupied by Buxton Mineral Water.

Achieving a 'through' station inevitably requires the station to move further from the town centre. Whilst not desirable, creative layout design and access, can minimise the effects. The location at [B] was therefore seen as the best site to serve the area - particularly the walk-in and town centre catchment. However, physically, there are problems from a railway 'design standards' perspective.

The horizontal track radius is below 300m when current standards seek an absolute minimum of 1000m; and the gradient is 1 in 65 when current standards seek a minimum of 1 in 500. Both of these standards relate to safety. The horizontal radius relates to stepping distance between platform and train - the smaller the radius the greater the stepping distance. The gradient relates to the driver leaving a train to change ends when a train is terminating. Consultation with Her Majesty's Railway Inspectorate (HMRI) confirmed their view that this combination of horizontal and vertical alignments was pushing the tolerances of dispensation (against standards) too far. Further design investigation has however shown that, even on the tight radii necessary, stepping distances between vehicles and platforms could be kept within the maximum limits. Further discussions with the HMRI may persuade them to relax their stance on this location.

An alternative location [C] was therefore identified, at which a station could be accommodated within acceptable horizontal and vertical design criteria. However, the land to either side of railway is in private ownership and designated for development. The remaining corridor, whilst of sufficient width for station platforms, would not permit provision of access roads, car park or station buildings. Additionally, this location was considered by some stakeholders to be unsatisfactory in relation to the town centre.

The only further alternative appears to be based around continued use of the existing station. This would require trains from the Matlock direction to run into the sidings at Buxton and then reverse into the existing station – undesirable from both operational and journey time perspectives.

It has not, therefore, been possible to reach a firm conclusion as to the location or method of operation of a new station at Buxton. However, it has been demonstrated that there are several alternatives - all with different advantages and disadvantages – which would enable Buxton to be served by through train services. The economic assessment has used – as a worst case - the higher costed scheme (At Location C).

Structures under the line

These can be considered in two categories – those currently existing and those that have been removed and therefore require to be re-instated.

The existing underline structures are generally considered to be in a suitable condition for re-instatement of the railway with minimum remedial works. However, all arch structures are likely to require the construction of a concrete 'saddle' over the existing arches for purposes of strength and to facilitate installation of a waterproofing membrane. The scale of these works is likely to be slightly greater for options in which heavy axle load freight trains are envisaged.

Re-use of either of the existing viaducts at Millers Dale will, however, require their significant strengthening. Both are Listed Structures. We have concluded that the southern viaduct is the most suitable for strengthening and proposals have been developed in outline and discussed with an engineering contractor to confirm practicability. The proposals are intended to leave the external appearance of the viaduct unchanged.

Former bridges have been removed at a number of locations including the A6, Church Lane and Park Lane (all at Rowsley). Proposals for replacement structures have been developed to a level of detail that confirms the practicability of re-instatement. The replacement bridge over the A6 at Rowsley can

be designed, with some raising of the adjacent track levels, to achieve the required vertical clearance for road vehicles.

The former structure over Church Lane had particularly low headroom. Achieving full (5.3m) vertical clearance for a new structure will therefore be difficult. A solution maximising headroom (to approximately 5m) has been developed involving some re-profiling of the road levels.

Structures over the line

The principal issue in respect of structures over the line is their ability or otherwise to accommodate the gauge (shape) of trains on a double track railway. For passenger vehicles all are assessed as requiring no alteration.

For freight services, the gauge is a much more significant issue. We have assessed that to achieve the larger 'W8' gauge will require works, principally a lowering of the track, at a number of bridges.

All the tunnels on the former railway have been examined, except for Haddon Tunnel to which access was not granted. Those examined are in generally good condition and are assessed as being able to accommodate freight vehicles. Haddon Tunnel is, however, known to be in poor condition in places and the inability to carry out an examination results in some residual risk to the project.

Footpaths across and along the former line

The former railway is crossed by a number of footpaths. It is proposed to maintain access along all these paths by the provision of footbridges across the re-opened railway.

The Monsal Trail, which uses the former railway alignment, could not however remain and options for creating an alternative Trail are reported in the next Chapter.

The Derwent Valley Heritage Path follows the railway alignment (currently a single line used by Peak Rail) closely between Matlock and Rowsley. Over some sections of the route the path is situated on the top of the railway embankment and would have to be re-aligned to accommodate the railway proposals. This would be achieved by localised widening of the railway embankment to enable the re-aligned path to run at a level above the River Derwent floodplain.

Signalling Systems

For a railway constructed to form part of the national rail network, the signalling systems will need to interface with those existing to the south and north. It has been difficult to determine what signalling strategy might be followed by Network Rail in the period prior to a re-opening of the route being realised. We have therefore assumed that the form of signalling will use existing, proven, technology controlled from an existing signalling centre. Further, it has been assumed that the signalling between Buxton and Stockport will remain as existing.

The level crossings at Station Road and Church Road, Darley Dale are proposed to be retained with modernised control systems, a strategy that has been accepted in principle by the Railway Inspectorate.

12.3 SUMMARY

- Many permutations of track layout are possible for varying timetable requirements. The use of sections of single track will, however, constrain the ability to 'flex' the timetable to suit changing requirements.

- Providing a regular freight train path each hour requires the provision of additional infrastructure over that required for the passenger service alone.
- There is no insurmountable engineering difficulty in re-instating the railway in either single or double track form.
- Determining a solution to the location of Buxton station is the most critical issues – and as yet remains unresolved.
- The upgrade necessary on the Chinley route – to bring it up to passenger standard - is less well defined than for the Buxton options.

13. MONSAL TRAIL

13.1 BACKGROUND

The impact of a re-opened railway on the Monsal Trail has been investigated by previous studies - the most recent being that conducted by Land Use Consultants Ltd in April 1998. This study concluded that, even if a railway was single track, there were a number of reasons why it was preferable for the Monsal Trail not to remain in its current position. These included:-

- The devalued quality of the trail with trains operating alongside it
- Safety and the need to fence the railway – thus further devaluing the visual qualities of the trail.

Alternative alignments were therefore suggested for much of the length of the trail, although some parts were to remain alongside the railway.

With the current re-opening proposal suggesting that a railway may be double track width it was determined that the issue of the trail should be more thoroughly investigated with a view to identifying whether a satisfactory replacement could be found.

The eight and a half mile route from Coombs Road viaduct (south east of Bakewell) to Blackwell Mill Junction (three miles east of Buxton) runs through traditional Derbyshire Dales landscape and west of Monsal Head descends into the deep valley of the River Wye. Alternative routes have been provided around four tunnels that have had to be closed to the public.

It was never intended that the study would propose a definitive route for a replacement Monsal Trail – to develop such proposals would be a time consuming and costly exercise. Rather, it was to demonstrate, if possible, that an acceptable replacement could be provided – meeting the 'requirements' for such a replacement, if the restoration of the rail services proceeds.

The Policy Sub-Committee of the Peak District National Park Authority approved – on July 18th 2003 – the following 'advice' on the characteristics which a new trail should seek to meet:-

- Continuous route between Blackwell Mill and Rowsley with possible extensions to Buxton and Matlock and beyond subject to broader consideration.
- Links to settlements, planned railways stations and halts, bus stops and public car parks.
- Provision for cyclists and walkers, including the less ambulant , and for electric wheelchairs and buggies.
- A connected path and cycle route of adequate width, which as necessary segregates cyclists from walkers and minimises anticipated environmental capacity pressures (visual, perceptual, ecological, archaeological)
- Consideration of compensatory provision for horse riders if it is not possible to accommodate them on the trail.
- Protection of the valued characteristics of the National Park, with mitigation measures where necessary
- Opportunities for enjoyment and meaningful interpretation of valued characteristics of the Park
- Routes that are inherently attractive, sometimes spectacular and varied and where possible follow public rights of way.
- Routes that are designed to benefit the local economy without harming the valued character of the area.
- Reasonable provision to protect residential and village amenity.

13.2 THE POSSIBLE 'ALTERNATIVE ROUTE'

Volume 4 provides further details of the review of options for the trail.

The route which is suggested can be summarised as:

- Starting from Rowsley, following the footpath trail towards Haddon Estate.
- Then follows the banks of the River Wye from the Haddon Hall Estate into Bakewell and pushes through the town via the new riverfront developments and riverside meadows.
- On leaving Bakewell it follows the A6 for a short while before reverting to a riverside path leading to Ashford in the Water.
- After passing through the village it crosses the A6 and then uses existing paths on the south side of the river, reaching the Car Park and Picnic area at Taddington Wood.
- Re-crossing the A6 it then passes through Monsal Dale following the path between the wood and the river, before striking up the valley side to Monsal Head.
- Going back down into the Dale it follows the line of the road to Cressbrook Mill, possibly on a newly created path in the field at the side of the road.
- The existing Trail route from Cressbrook Mill to Litton Mill is retained, but it then follows the minor road from Litton Mill to Miller's Dale - which is likely to remain a popular access point onto the trail, but the trail west from there will follow the river valley again, into Chee Dale and on to the Wyedale Car Park.
- Then connection via Woo Dale (from Cowlow) towards Waterswallows Road, and finally onto the footpath adjacent to the A6 into Buxton.

13.3 POSSIBLE OTHER LINKAGES

Measures that could be taken to compensate for the loss of some of the features of the current trail could include:

- Development of wider and better surfaced paths around Bakewell to cater for those with disabilities;
- Alternative routes from Ashford direct to Monsal Head, including links to Little Longstone and Great Longstone that could also cater for riders;
- Additional links from Monsal Head to Little Longstone and Great Longstone;
- A cycling route linking Monsal and Miller's Dale Station via Brushfield;
- Provision of a circular loop to integrate the walk through Tideswell Dale and Tideswell Village;
- Possibly connect the right of way from the Anglers Leap Public House to the Limestone Way via Monk's Dale;
- Possibly connect Chee Dale to Blackwell, and/or Wormhill;
- Include the promoted Peak Park cycle trails that exist around Rowsley; and,
- Multiple use of the section between the Wyedale Car Park and Blackwell Cottages.

13.4 CONCLUSIONS

The purpose of this element of the study has been to assess the possibilities of finding an 'alternative Monsal Trail' meeting the broad requirements set out above.

Although the proposed solution is not intended to be a definitive answer it does suggest that a linear replacement incorporating circular linkages and braided routes for multi-use could be developed to a satisfactory conclusion.

The trail would be different in character from the existing route. This is not surprising since much of the current route was not 'designed' to meet the current 'requirements', but rather resulted from the 'opportunistic' use of a defined railway corridor. Comparisons between the existing trail and any new proposal are likely to be contentious to some sections of the community, in particular the landowners affected.

Discussion with the Countryside Agency in the North East, who have recently completed the Hadrian's Wall Path, suggests that the development of a new trail route to a successful conclusion will be a 'project' taking several years to complete. A new trail is likely, in itself, to be a potential instrument for economic benefit to the area– although such 'spin off' benefits have not been included in the economic assessment of this project.

The costs of constructing a new trail are not likely to be significantly influenced by any particular alignment and will represent a small percentage of the total capital project cost.

14. CAPITAL AND OPERATING COSTS

14.1 GENERAL

Economic evaluations of railway schemes will be heavily influenced by forecast revenues and also by Capital and Annual Operating Costs.

This Chapter summarises the key components of these costs. It also explains the inherent difficulty in determining a clear methodology for railway operating costs. The economic evaluation (reported later) has examined the sensitivity of the conclusions to changes in operating costs.

14.2 CAPITAL COSTS

The derivation of the capital costs is reported fully in Volume 3 and summarised in Tables 14 -1 and 14 -2 below. The costs are based on a variety of sources of data including general construction industry cost rates, railway industry current costs, and recent experience for railway works. The capital costs recognise that much of the work would be carried out in 'greenfield' conditions – and the higher unit costs of working on an operation railway do not apply.

The costs for the replacement for the Monsal Trail have been based on advice from the Countryside Agency from their recent experiences of the Hadrian's Wall Path.

The Capital costs include the costs of developing the scheme, derived from previous railway studies that Scott Wilson has been involved in.

A review of trends in the estimating of costs and revenues on publicly funded projects over a number of years reported in "Appraisal and Evaluation in Central Government" (The "Green Book"), produced by HM Treasury in January 2003, concluded that 'optimism bias' resulted – on average - in capital costs being understated by 40%.

The cost estimates quoted do not include a specific 'mark up' of 40% to counter optimism bias. They have, however, been compiled using a methodology and unit rates which, we believe, capture fully the costs of the project. Risks have been identified and priced and are included in the total project costs.

Table 14.1 Capital Costs Summary – 'via Buxton' route

ALL COSTS ARE £,000

Option	1A	1B	1C	1D
WORKS COSTS				
Site Clearance/preparations	£1,700	£1,700	£1,700	£1,700
Land / Compensation /Services Mitigation Measures	£7,700	£7,700	£9,750	£9,800
Civil Engineering	£6,200	£6,700	£6,700	£7,800
Signalling, Telecommunications and Electrical	£18,000	£18,000	£18,000	£20,600
Permanent Way (Track/formation)	£15,400	£26,600	£26,700	£31,200
Structures	£10,800	£10,500	£13,700	£14,300
New Monsal Trail	£1,500	£1,500	£1,500	£1,500
Station Costs	£7,400	£9,300	£9,000	£10,000
Total Works Cost	**£ 68,700**	**£82,000**	**£87,050**	**£96,900**
DEVELOPMENT COSTS				
Prelims and Contingencies	£2,400	£2,800	£2,900	£3,200
Development Phase	£6,800	£7,600	£7,700	£8,200
Transport and Works Application	£1,200	£1,200	£1,200	£1,200
Total development costs	**£10,400**	**£11,600**	**£11,800**	**£12,600**
Risk	£5,000	£10,000	£10,000	£10,000
TOTALS @ 2nd Quarter 2003	**£84,100**	**£103,600**	**£108,850**	**£119,500**

Table 14.2 Capital Costs Summary – 'via Chinley' route

Option	2A	2B	2C	2D
WORKS COSTS				
Site Clearance/preparations	£1,700	£1,700	£1,700	£1,700
Land / Compensation /Services /Mitigation Measures	£7,700	£7,700	£9,750	£9,800
Civil Engineering	£6,200	£6,700	£6,650	£7,800
Signalling, Telecommunications and Electrical	£18,000	£18,000	£18,000	£20,600
Permanent Way (Track/formation)	£20,100	£34,800	£34,900	£39,300
Structures	£10,800	£10,500	£13,700	£14,300
New Monsal Trail	£1,500	£1,500	£1,500	£1,500
Station Costs	£3,000	£5,000	£4,700	£5,700
Total Works Cost	**£69,000**	**£85,900**	**£90,900**	**£100,700**
DEVELOPMENT COSTS				
Prelims and Contingencies	£2,500	£3,000	£3,000	£3,300
Development Phase	£6,800	£7,800	£8,000	£8,400
Transport and Works Application	£1,200	£1,200	£1,200	£1,200
Total development costs	**£10,500**	**£12,000**	**£12,200**	**£12,900**
Risk	£10,000	£10,000	£10,000	£10,000
TOTALS @ 2nd Quarter 2003	**£89,500**	**£107,900**	**£113,100**	**£123,600**

14.3 OPERATING COSTS

14.3.1 General

Operating costs for a railway can be considered in two categories:

- The cost of operation of the train services
- The cost of maintenance and renewal of the infrastructure

Our initial approach has been based on the assumption that the railway would be owned and operated, broadly as part of the national rail network.

14.3.2 Costs of Train Service Operation

The costs of train service operation comprise the leasing costs of the trains, train crews, fuel, maintenance and the overhead/profit of the train operating company. Whilst these can be assessed individually, at this level of study we have chosen to use an overall 'cost per train kilometre ' for operational costs.

The cost per train kilometre has been assessed using data from recent accounts of Train Operating Companies (TOCs) operating similar services to those envisaged on this route (e.g First North Western and Central Trains). The rate used is £5.45 per train kilometre.

14.3.3 Cost of Maintenance and Renewal of the Infrastructure

The cost of maintenance and renewal of the National Rail network is funded by the Track Access charge made to Train Operating Companies and, following recent decisions of the Rail Regulator, from annual grant from the Strategic Rail Authority.

Track Access Charges are built up of a number of elements.

- Fixed Track Charge
- Variable Track Charge
- Traction Electricity Supply
- Incremental Output Statement Charge
- Railway Safety Charge
- Capacity Charge

The principal costs relevant to this project are the fixed and variable track charges. However, for completeness, all the elements are summarised below.

The **fixed track charge** element is intended, overall, to fund Network Rail's total revenue requirement and is allocated between the Train Operating by means of a complicated formula reflecting many criteria such as train miles operated, area of operation and type of route (eg. Strategic, Regional etc). However, it is worth noting that the allocation of charges is not 'route specific' but more generalised and hence does not reflect accurately the real costs of maintaining a route or sections of route for the traffic operating over it.

The **variable track charge** is usage dependant and designed to allow Network Rail to recover the additional maintenance and renewals costs associated with additional traffic. The cost per vehicle mile depends on weight, unsprung mass, maximum operating speed, maximum speed and number of axles.

The variable charge is a comparatively small proportion of the total track access charging regime and rates are laid down in Rail Regulator's schedules for various types of rolling stock. Diesel Multiple

Units typically are charged of at a rate of 12 pence per vehicle mile (i.e 36 pence per mile for a three coach unit).

In principle, the sections of existing railway route used as part of the scheme should not attract an additional fixed track access charge. This may, in practice, be an over simplification but is considered a robust assumption at this stage of analysis. The cost of the current fixed track access element cannot, in any case, be determined for the discrete sections of route affected by the project.

Similar difficulties arise in determining what charges would be raised for maintenance and renewal of the 'missing section' between Matlock and Peak Forest Junction – assuming that this became part of the Network Rail's ownership. This section of route – by the nature of the capital investment associated with reconstructing the railway – should have a comparatively low maintenance (and virtually no renewal) cost for 15 or so years after re-opening. If ultimately owned by Network Rail we would anticipate a route specific cost agreement to be agreed for these costs.

We have investigated different methods of assessing a likely annual level of maintenance and renewal expenditure based on assessment of approximate costs per track mile of existing Network Rail maintenance contracts and Track Access payments made by Train Operating Companies. We have concluded that a realistic figure is £30,000 per track mile – resulting in total costs in the range of £800,000 to £1,000,000 per annum depending on the amount of new track installed.

The **Traction Electricity Supply** charge is of relevance to electrically hauled trains – and therefore not applicable to this project (where diesel hauled trains will be used).

The **Incremental Output Statement Charge** relates to the funding of additional infrastructure specifically agreed between Network Rail and the Train Operating Company.

The **Railway Safety Charge** funds the industry Safety and Standards Board. Whilst applicable to all railways it is a small proportion of total cost and has not been taken into account at the current level of project assessment.

The **Capacity Charge** is a recent introduction to allow Network Rail to receive additional costs in respect of sections of their infrastructure where capacity is constrained and the imposition of additional service may worsen train performance. It is not considered applicable to this project.

15. DEMAND FORECASTING

15.1 INTRODUCTION

This chapter summarises the approach to assessment of the potential travel demand impacts of the reopening of the railway and the key findings.

Assessment has been carried out using a computerised 'transport model' based on the MidMan Transport Model, which was previously developed and used to assess strategies and measures in the Midlands to North-West Conurbations Multi Modal Study (Final Report, March 2002 for Government Offices for the West Midlands and North West). Further details of the forecasting model are contained in Volume 1B.

The assessment of new railway schemes requires economic assessment over a period of 30 years of operation. It has therefore been assumed – for the purposes of this study - that the railway would commence operation in 2011, with demands and economic assessment up to 2041.

Forecasts have been made of road and rail traffic for the years 2011, 2031 and 2041 in the following situations:-

- A 'do-minimum' scenario – where transport policies and transport infrastructure remain unchanged from that currently existing.
- With a the new rail link operational via Buxton
- With the new rail link operational via Chinley

A 'sensitivity test' forecast was also made, in which a £5/day charge was applied to all road traffic passing through or travelling within the study area. The use of a charge of £5 represented a 'proxy' for the available range of traffic management and restraint measures that might be implemented.

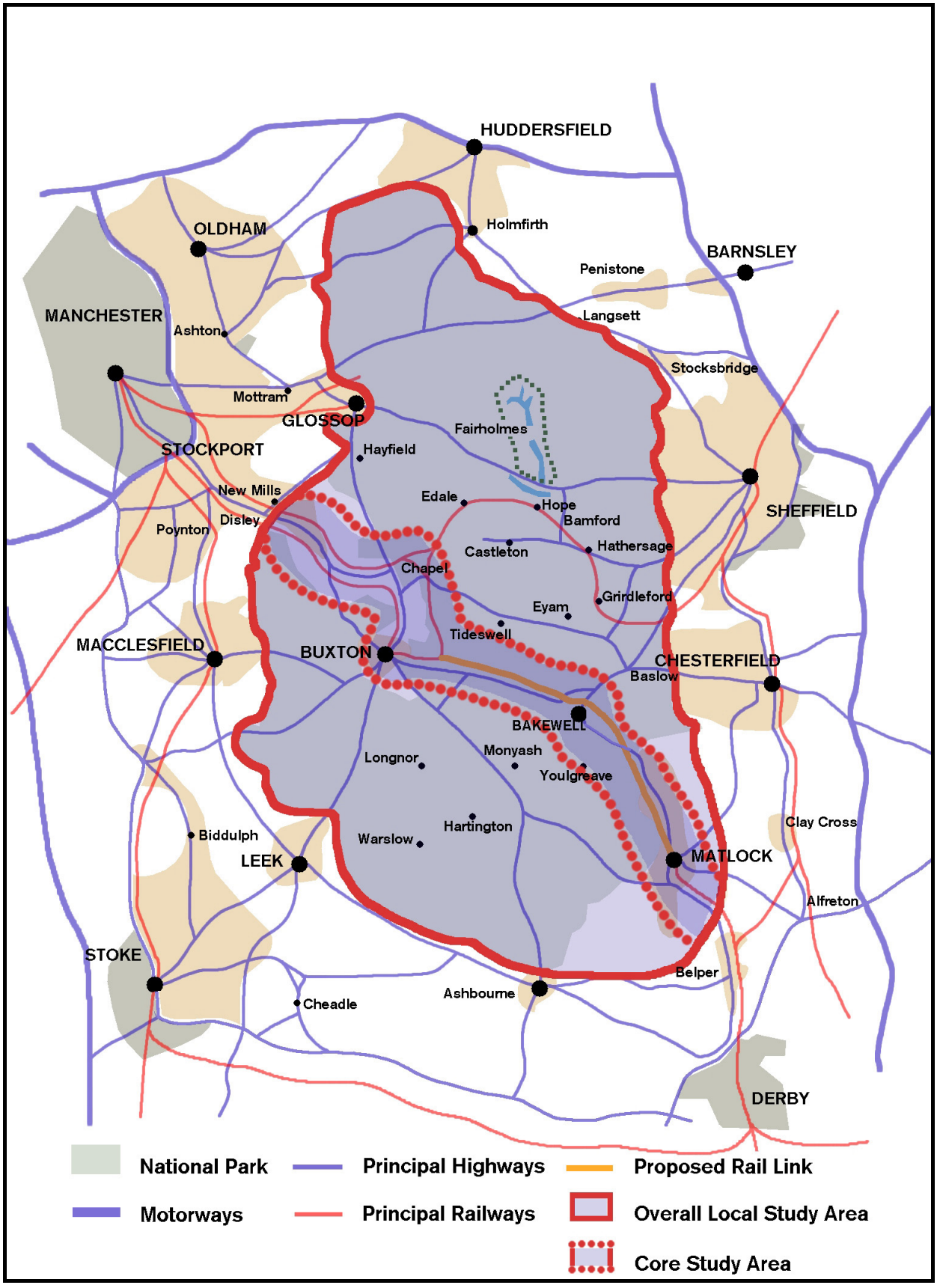
The forecasts have been made across two geographic areas:-

- An Overall 'Local Study area', which is broadly defined by the boundary of the Peak District National Park plus areas between Matlock and Ambergate and around Buxton
- The Core study area - based around the rail corridor from Ambergate to Disley/Chinley and including the A6.

These two areas were selected with the aim of identifying the effects of a railway within the immediate corridor (where they would be expected to be most marked) and putting this demand into the context of the wider Peak District National Park area.

These areas are shown diagrammatically in Figure 15.1

Figure 15-1 Overall Local Study Area and Core Study Area



15.2 FORECAST DEMAND

15.2.1 The Demand Model

The demand model produces forecasts for both highways and public transport. It is strategic in nature and can segregate car, light and heavy goods vehicle volumes as well as rail passenger demand.

The model is able to simulate commuting, leisure and tourism demands.

Forecasts can be made for typical peak hours (08.00 to 09.00 hrs) and interpeak hours (average of 10.00 to 16.00hrs)

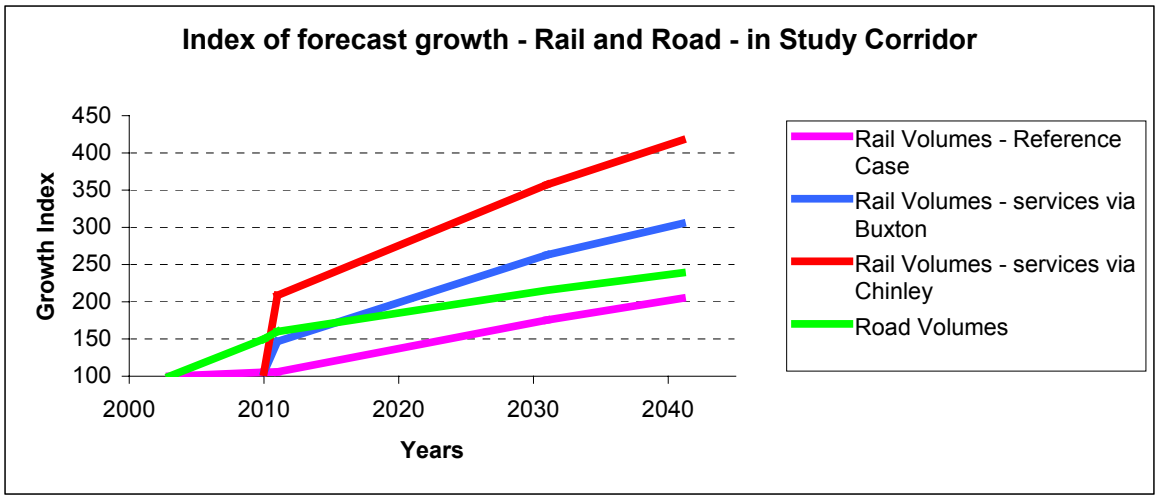
15.2.2 Summary of Findings

The forecasts for the interpeak period showed:-

- road vehicle-kilometres increasing by 139% (i.e more than doubling) in the rail corridor by 2041 in the Reference Case ('do minimum/status quo').
- Rail passenger volumes increasing by 105% in the rail corridor by 2041 in the Reference Case ('do minimum/status quo'). The main components of this increase are general growth in rail patronage and some mode switch to rail caused by increasing congestion on the road network.
- Implementation of the high specification (twice hourly) service via Buxton resulted in further passenger growth of 49% (over and above the growth in the Reference Case) in 2041.
- The higher specification service via Chinley resulted in further passenger growth of 105% (over and above the growth in the Reference Case) in 2041.

These trends are shown graphically in Figure 15.2 below

Figure 15 - 2 : Index of forecast growth – road and rail



Further interpretation of these forecasts show:-

- The increase in rail passenger volumes 'via Buxton' and 'via Chinley' arises partially from passengers currently travelling by rail between Derby and Manchester via either Sheffield or Stoke on Trent, diverting to the new route.
- The 'via Chinley' route shows greater growth than the 'via Buxton' route partially as a result of demand for travel from Chapel and Chinley towards Manchester – where the proposals in this study would significantly the frequency of services compared to current levels.

The implementation of some form of road traffic restraint is forecast (compared to the Reference Case) to deter some people from using the road network and encourage increased use of rail, to the extent of reducing the growth in road traffic by 7%. Rail passenger volumes increase by 70% over that forecast for a situation without road restraint

Further forecasting was carried out to identify if peak periods were significantly different from the inter-peak. The key findings were:-

- The forecast indicates more road travel in the peak (AM) period than in the inter-peak (IP).
- The rail forecasts predict more travel by rail in the study area in the inter-peak than in the peak. This is because the Rail Industry Forecasting Framework (RIFF) forecasts a higher growth in the inter-peak when leisure purposes are more prevalent, than it does for commuting and work related purposes which predominate in the AM

A more detailed analysis of the predicted rail and highway trips in the year 2041 indicates that the introduction of the "via Buxton" service results in a reduction in road journeys in both peak and inter-peak periods (with broadly corresponding increases in rail travel) when compared to the Reference Case ('Do minimum/status quo'). These equate to approximately 920,000 road trips a year being avoided by the introduction of the rail services, which represents approximately 2% of all road journeys in the rail corridor. Modal shift is therefore modest.

15.3 FORECAST RAIL PASSENGER VOLUMES

The demand model outputs, in conjunction with data on existing passenger volumes on the Manchester to Buxton, Derby to Matlock and Hope Valley (Sheffield to Manchester) routes have been used to forecast the annual passenger volumes for each of the service options.
These are shown in Table 15 – 1.

Table 15-1 Forecast Total Journeys Annually on Route

Year	Reference Case ('Do Minimum')	Option 1A. Hourly services via Buxton	Option 1B. Twice Hourly services via Buxton	Option 2A. Hourly services via Chinley*	Option 2B. Twice Hourly services via Chinley*
2003	1,120,000	-	-	-	-
2010	1,150,000	-	-	-	-
2011	1,160,000	1,450,000	1,660,000	1,770,000	2,220,000
2021	1,590,000	2,060,000	2,390,000	2,460,000	3,090,000
2031	1,940,000	2,550,000	2,990,000	3,020,000	3,800,000
2041	2,270,000	2,970,000	3,470,000	3,530,000	4,440,000

*For services routed via Chinley these passenger numbers include journeys between Buxton and Manchester using the existing services, which will remain in operation.

The additional journeys arising from the new link (i.e the difference between each option forecast and the reference case) are given in Table 15-2:-

Table 15-2 Additional Journeys Annually arising from new link

Year	Option 1A. Hourly services via Buxton	Option 1B. Twice Hourly services via Buxton	Option 2A. Hourly services via Chinley*	Option 2B. Twice Hourly services via Chinley*
2011	290,000	500,000	610,000	1,070,000
2021	470,000	810,000	870,000	1,500,000
2031	610,000	1,050,000	1,080,000	1,860,000
2041	700,000	1,210,000	1,260,000	2,170,000

16. ECONOMIC AND QUALITATIVE APPRAISAL

16.1 APPROACH

The approach taken to the Financial and Economic Cost Benefit Analysis has been to use the Strategic Rail Authority's Appraisal Criteria documents of April 2003, which follow the approach outlined in the Guidance on the Methodology for Multi Modal Studies (GOMMMS), and in line with Treasury Guidance of Appraisal and Evaluation in Central Government (The "Green Book").

Each of the rail service options (1A to D and 2A to D) were appraised and compared to the 'reference case', which represents the forecast situation if the status quo in terms of public transport prevails in the study area.

Additionally, these results were tested for 'sensitivity' to changes in:-

- forecast passenger revenue
- operational costs
- capital costs

Further, changes in rail demand forecasts as a result of imposing some form of road traffic restraint were appraised.

The appraisal – in accordance with SRA guidelines – covered a period of 30 years from initial operation of the line. For the purposes of appraisal (and passenger forecasting) the line was assumed to be operational in the year 2011.

The conventional way of presenting the results of a financial analysis is by means of the calculated Net Present Value (NPV). The Net Present Value process 'discounts' the costs of the total expenditure and revenue of the project over its whole life to determine and equivalent value at 'today's cost'. The discount factor is set by current guidance at 3.5% per year for the first 15 years of a project and 3.0% per year thereafter.

Net Present Values provide a means of 'ranking' projects against one another, rather than an indication of whether a project is worth implementing or not.

Additionally, we have assessed the net passenger operational costs (i.e the margin between operational cost and revenue) in the years 2011, 2021, 2031 and 2041.

Economic cost benefit analysis in such schemes would typically emerge from non-user benefits accruing from transport accessibility, safety and environmental benefits. This is assessed by calculating the "Transport Economic Efficiency" (TEE) for each option.

16.2 ECONOMIC ASSESSMENT

16.2.1 Net Present Values

Net Present Values have been calculated by using the capital and operating costs and the forecast revenue over a 40 year period from 2003.

The results are shown in Tables 16 – 1 and 16 – 2 below.

Table 16-1 – Net Present Values for Buxton route options

		Project Scenarios – via Buxton			
	Option	1A	1B	1C	1D
	Reference case	Low Spec (Passenger only)	High Spec (Passenger only)	Low Spec Passenger + freight provision	High Spec Passenger + freight provision
Total NPV	- £300,000	- £95,400,000	-£153,400,000	-£107,900,000	-£158,200,000
Net Difference with Reference Case		**- £95,100,000**	**-£153,100,000**	**-£107,600,000**	**-£157,900,000**

Table 16-2 Net Present Values for Chinley Route options

		Project Scenarios – via Chinley			
	Option	2A	2B	2C	2D
	Reference case	Low Spec (Passenger only)	High Spec (Passenger only)	Low Spec Passenger + freight provision	High Spec Passenger + freight provision
Total NPV	- £300,000	- £106,300,000	-£132,700,000	-£118,000,000	-£137,300,000
Net Difference with Reference Case		**- £106,000,000**	**-£132,400,000**	**-£117,700,000**	**-£137,000,000**

It must be noted when considering the Net Present Values above that the total values can be heavily influenced by the discount factors used. In current conditions – with low discount rates – costs and revenue at the end of the 40 year period contribute significantly to the final NPV figure.

The Reference Case – which shows a small negative NPV – is based on the assumption that no capital works (other than those funded by the Track Access payments) will be required to carry the forecast passenger numbers. Whilst this is considered a reasonable assumption it may lead to a slightly optimistic Reference Case NPV. However, comparisons with the proposed project options will still be valid.

The following observations can be made:-

- All rail options have a significantly worse Net Present Value when compared to the ‘ Do Minimum ‘ (i.e maintaining the status quo)
- The best rail option is the lower specification passenger only service routed via Buxton

- Accommodating regular freight paths significantly worsens the NPV when compared to the 'equivalent ' passenger option. However, if freight were operated on the passenger only infrastructure (which would limit overall capacity and the train paths available) the Net Present Values for Options 1A, 1B, 2A, 2B would improve slightly (i.e become less negative).

16.2.2 Net Passenger Operation Costs

The net operational costs (i.e the difference between the cost of operating the services and the revenue), compared to the reference case, in the years 2011, 2021, 2031 and 2041 are shown in Table 16 – 3. These figures can be related to the additional number of passengers journeys forecast to be made – giving an indication of the level of funding support necessary.

Table 16-3 Net Passenger Operation Costs

Year	2004	2011	2021	2031	2041
Reference Case	**-£5,300,000**	**-£4,300,000**	**-£620,000**	**£4,600,000**	**£11,300,000**
Via Buxton 1A/1C		**-£6,000,000**	**-£2,000,000**	**£3,600,000**	**£10,400,000**
Cost Difference over reference case		*-£1,700,000*	*-£1,380,000*	*-£1,000,000*	*-£900,000*
Additional Passengers (from Chapter 15)		290,000	470,000	610,000	700,000
Funding support per passenger journey (£)		5.86	2.93	1.64	1.28
Via Buxton 1B/1D		**-£11,700,000**	**-£5,800,000**	**£2,700,000**	**£12,800,000**
Difference over reference case		*-£7,400,000*	*-£5,180,000*	*-£1,900,000*	*£1,500,000*
Additional Passengers (from Chapter 15)		500,000	810,000	1,050,000	1,210,000
Funding support per passenger journey (£)		14.80	6.39	1.80	No support
Via Chinley 2A/2C		**-£7,800,000**	**-£2,900,000**	**£3,800,000**	**£12,300,000**
Difference over reference case		*-£3,500,000*	*-£2,280,00*	*-£800,000*	*£1,000,000*
Additional Passengers (from Chapter 15)		610,000	870,000	1,080,000	1,260,000
Funding support per passenger journey (£)		5.73	2.62	0.74	No support
Via Chinley 2B/2D		**-£12,700,000**	**-£5,300,000**	**£5,000,000**	**£18,200,000**
Difference over reference case		*-£8,400,000*	*-£4,680,000*	*£400,000*	*£6,900,000*
Additional Passengers (from Chapter 15)		1,070,000	1,500,000	1,860,000	2,170,000
Funding support per passenger journey (£)		7.85	3.12	No support	No support

The following observations can be made:-

- The forecast increase in demand for rail over the period to 2041 results in all options moving to a net operating profit.

- Option 1A requires the least additional operating subsidy – however it never shows a 'better' financial performance than the reference case.
- Conversely, Option 1B, whilst worse that Option 1A in the short/medium term, is forecast to return a better performance than the reference case towards the end of the assessment period. This is a result of the higher frequency service attracting a greater proportion of the (larger) travel market at the end of the study period.

16.2.3 Transport Economic Efficiency (TEE)

Transport Economic Efficiency calculations allow the 'wider benefits' of investment in transport systems to be captured and assessed against the capital costs and, where applicable, the operational support costs. It is assessed by calculation of the ratio of overall benefits to costs.

The 'wider benefits' arising from this scheme are principally the value of journey time savings accruing to users and non users and additional economic activity resulting from increased tourism facilitated by the railway.

The benefits to costs ratio (over a 30 year period) range from 0.51 to 0.70 for different options – with the higher specification (twice hourly) service via Buxton giving the best ratio.

16.2.4 Sensitivity testing

General

The financial forecasts have been subject to a number of tests to identify their sensitivity to changes in the original assumptions and demand forecasts.

Highway Restraint

To model the effect of highway restraint demand was assessed with the imposition of a £5 charge to all road journeys within a cordon covering the Peak District National Park. This charge was a 'proxy' for the effects of a range of highway restraint measures that could be implemented.

This was the only option that appeared to generate significant modal shift, reducing road traffic increases by the equivalent of 8 and 10 years growth and having a further positive impact on rail growth. Since it was only tested in year 2041 it is not possible to draw full conclusions about the impact of this scheme other than to say that rail passenger volumes would be between 1.4 to 1.7 times higher than without it. The ranking order remains the same but the financial NPVs reduce (i.e improve).

Changes in Revenue and Operating Costs

Revenue forecasts are based on existing average fares per passenger kilometre for similar railway services with year on year increases of 1% above Retail Price Index (RPI) for the first 8 years of operation and increases in line with inflation after that date.

Changes in forecast revenue may result either from a decision to charge a higher average fare per passenger kilometre or, more significantly, from an increase in the predicted number of passengers per year.

The basis for calculating the operating costs has been set out in Chapter 14. The resulting annual operating costs arise from applying the average cost per train kilometre to the proposed total number of

train services in the timetable for each option. Reductions in operating costs potentially arise from three sources.

Firstly, the train service frequency in each option has been assumed to operate throughout the day from approximately 06.00 to 23.00. This is probably pessimistic since, in reality, service frequencies may be reduced at times of the day when demand is lowest. This can be done with little reduction in total passenger demand. Actual annual train kilometres travelled will therefore be lower than theoretical.

Secondly, the average cost per train kilometre used in the economic assessment is based on the average for all services operated by Train Operating Companies providing 'rural/inter-urban' services. This cost may be considered higher than that which is 'directly attributable' to the provision of services on this route.

Thirdly, the fixed element of Track Access charge is only an assessment based on current understanding of industry costs. The actual cost (for the new section of route) is likely to be subject to negotiation and, if based on actual maintenance/renewal costs, may be lower than assumed.

The forecasts were therefore assessed for the following changes in total costs/revenue:-

a) A 15% reduction in total operating costs
b) A 30% reduction in total operating costs
c) A 15% increase in total revenue
d) Occurrence of (a) and (c) together.

Each of these changes results in an improved financial performance for each of the service options. All options, however, still require financial support in the initial years of operation.

16.3 QUALITATIVE APPRAISAL

The Appraisal Summary Tables contained in Appendix A follow the format suggested in GOMMMS of commenting on the qualitative impacts, providing a quantitative measure, and then an overall assessment for each sub-objective. The advice in GOMMMS [paras 6.2.9 and 6.2.10 of Volume 1] is as follows:

> *The information presented in the Appraisal Summary Table is, where possible, based on the results provided by established techniques to assess the environmental, economic and social consequences of options. The Appraisal Summary Table brings information from these together to give a fair and unbiased overall description, without giving prominence to any one type of effect or to benefits expressed in monetary terms compared with those which cannot be monetised.*
>
> *The main impacts in relation to each of the sub-objectives are summarised in text with any relevant quantified information. A summary assessment is then given to indicate whether the impact in each category is generally beneficial or adverse and how large it is. Where monetary values can be derived, as in the case of safety benefits or transport user benefits, the summary assessment uses those values. Where impacts can be quantified but not monetised, the summary assessment is quantitative*

17. ENVIRONMENTAL APPRAISAL SUMMARY

17.1 INTRODUCTION

The Environmental Appraisal has considered the options in respect of:

- Land Use, Planning and Community Impacts
- Landscape and Visual Effects
- Nature Conservation and Biodiversity
- Archaeology and Cultural Heritage
- Geology and Soils
- Water Resources
- Noise and Vibration
- Air Quality

The appraisal is reported in detail in Volume 2 with the key issues summarised below.

In respect of a non-rail based option (which would involve an enhanced bus service along existing road routes), it is anticipated such an option would not result in significant adverse environmental impacts/effects. However, neither would it be able to deliver any significant measurable benefits. The resultant effects would largely be the same as the future baseline (i.e. the do-minimum option).

17.2 LAND USE PLANNING AND COMMUNITY IMPACTS

Proposals to reintroduce rail services between Matlock and Buxton/Chinley are supported in principle by planning policy at national, regional and local levels. Furthermore the Matlock to Buxton route is safeguarded in all of the relevant existing and emerging strategic and local policy documents and protected from (further) development which may prevent construction and reintroduction of rail services on the route.

As a caveat to the above, traffic modelling as undertaken as part of this feasibility study indicates that none of the rail options considered herein would be able to deliver significant modal shift of traffic from the road network onto the railway. Modal shift is assumed by much of the planning policy documentation as cited herein, and the failure to deliver such reductions significantly weakens support for the Scheme in terms of national, regional and local planning policy. There are, however, methods of stimulating modal shift that could improve the performance of the Scheme in planning policy terms which may need to be investigated further should it be deemed that the Scheme cannot be taken forward in its present form.

There are two key locations where the integrity of the proposed route is compromised by current land uses – i.e. at Rowsley Industrial Estate and at Bakewell Station where existing land uses would need to be relocated. Broader consideration of receptors (land use) on the route corridor indicate that other than the two examples cited above, and a tract of land at Rowsley sidings, no land outside the existing track bed would be directly affected. There would be effects upon residential units and other occupied building as a result of noise, dust and visual intrusion during both scheme construction and operation, and as such appropriate methods of mitigation would be required.

It is likely that temporary severance of local footpaths and walking trails could occur during the construction phase and as such it is anticipated that alternative access arrangements and pedestrian routes would need to be implemented. With regard to the Monsal Trail, this would need to be diverted along an alternative route and is the subject of a separate report (refer to Volume 4). In addition, parts of the route and elements of railway infrastructure are popular for rock climbing - loss of these facilities would affect such activity and the availability of alternative locations would need to be considered in further discussions with relevant groups should the scheme progress.

17.3 LANDSCAPE/VISUAL

The appraisal has highlighted the potential for significant landscape and visual effects during the construction phase, although there would be little directly arising from re-instatement of the track. There would also be beneficial effects as a result of improving the condition of key structures and landscape features thereby ensuring their longevity. However, operation of the railway would potentially generate significant landscape and visual effects, primarily as a result of the introduction of rail traffic into areas of significant landscape value. The rail infrastructure, including bridge structures, stations and boundary treatments would need to be designed in a sensitive manner incorporating local materials appropriate to local character, whilst a range of mitigation features would need to be included in the scheme design. Option 1A would have the least impact upon the character and tranquillity of the surrounding areas. Impacts would increase as the level of track use intensifies. Option 1D would comprise the highest frequency of rail traffic and would require double track layout throughout which would mean that this option would have the greatest landscape/visual effect.

17.4 NATURE CONSERVATION AND BIODIVERSITY

The Scheme would pass through an area of particular ecological sensitivity - this includes several SSSIs and the Peak District Dales cSAC. Given the sensitivity of the area, Scheme construction and operation would need to be very carefully controlled in order to avoid unacceptable environmental implications.

Whilst the various options involve varying degrees of single and double track, it is considered likely that all options would result in the loss of approximately 8 linear km of vegetation contained on the trackbed between Monsal Head and Millers Dale, 7km of which is contained within the Wye Valley SSSI - this includes species rich habitats of between regional to national value to nature conservation. The total loss of the vegetation on the trackbed, especially within the SSSI is a significant impact - however, the scale of loss should be evaluated within the scale of the designated area, of which the total habitat loss would represent a very small percentage (approximately <1% of total area). Additionally, all the habitat types occur in larger quantities elsewhere, as do the rare/scarce plants found along the route (although it is noted that in Derbyshire, yellow bird's-nest is only found on the trackbed near Millers Dale). For these reasons the scale of impact in the opinion of this report is minor adverse. However, this does not negate the need to provide a comprehensive package of offsite ecological compensation land (possibly involving species translocation).

With regard to the Peak District Dales candidate Special Area of Conservation (cSAC), it is the conclusion of this report that the integrity of the cSAC would not be significantly affected – although it would be subject to a minor adverse effect. The nature conservation features and objectives for which this area was designated would continue to be maintained - this is mainly due to the very small amounts of landtake compared to the size of the cSAC. With appropriate mitigation, no adverse effects should occur as to affect the nature conservation importance of the River Wye SSSI. However, as there would be some impact on the cSAC, the Scheme would still have to be subjected to an Appropriate Assessment.

Whilst all Scheme scenarios would have these effects, it is apparent that during scheme operation, effects associated with disturbance etc would increase as the level of track usage intensifies. As such, operation of the low passenger options (Options 1A and 2A) are considered to have less nature conservation effects than the other options.

17.5 ARCHAEOLOGY AND CULTURAL HERITAGE

All the options would have a similar level of effect on the historic environment.

Listed buildings associated directly with the railway would largely incur a moderate or slight beneficial impact as a result of their restoration and return to their original use, assuming that structure restoration would be undertaken in a manner in keeping with their character.

With regard to other listed buildings located along the route, some may suffer a slight adverse impact as a result of a change to their setting.

Overall the archaeological and cultural heritage effect of the various options is considered to be neutral.

17.6 GEOLOGY AND SOILS

Reinstatement of the railway would prevent access by the public to some sites of geological interest along the railway corridor. There is also some potential for works associated with the railway reinstatement to physically affect geological sites.

There is also some potential for effects to occur due to the presence of land contamination along or in close proximity to the railway route. However it should be possible to mitigate potential effects by undertaking preliminary site investigations and the effective implementation of good construction practices throughout the works.

17.7 WATER RESOURCES

It is considered that potential impacts on water resources can be reasonably mitigated by the implementation of appropriate mitigation measures, including best practice methods based upon Environment Agency guidelines and procedures. Scheme operation would also have the potential to impact upon water resources and as such specific actions would be needed – this includes actions to control track drainage, the control of sewage effluents from trains and the implementation of appropriate track maintenance regimes.

17.8 NOISE AND VIBRATION

Scheme construction could potentially impact upon identified noise sensitive receptors, although with the effective implementation of appropriate construction techniques and plant, such impacts should be minimised.

Noise and vibration effects during Scheme operation are dependent upon the level of train usage and whether or not freight trains operate.

With Option 1A, the potential noise impacts are slight, with mitigation in the form of noise barriers only likely to be required to properties within approximately 10m of the track. However, for Option 1D noise impacts are significantly higher with noise barriers potentially being required to protect properties some 140m from the track, whilst even with such noise barriers, properties within approximately 20m of the track may still qualify for noise insulation. The use of noise barriers raises (particularly in the Peak District National Park) potential issues of visual intrusion. The form of noise barrier provided will need, therefore, to take into account location/visual issues and might include earth bunds and dry stone walling.

In addition, freight train operation may necessitate the requirement for vibration mitigation in order to protect properties within approximately 20m of the track. Freight use of the track would also increase the impact upon areas that are currently tranquil and used for recreational purposes.

Scheme operation is not anticipated to deliver a major noise benefit given that the traffic modelling indicates that the railway Scheme would not result in a significant reduction in road traffic within the Peak District National Park. As such, overall the Scheme would be deemed to be adverse with respect to noise.

17.9 AIR QUALITY

Construction of the railway would have the potential to generate dust – however, with the implementation of applicable standard good practice mitigation measures, effects are likely to be negligible. The air quality impact of rail operations increases as track usage intensifies – however, Options 1A to 1D are all predicted to have a negligible impact on local air quality.

There are unlikely be to any significant air quality effects on identified sensitive receptors during railway operation, with the possible exception of the potential impact of steam train operated heritage rail services.

Scheme operation is assessed to result in the emission of greenhouse gases of between 165 tonnes of CO_2 per year and 331 tonnes of CO_2 per year. This is likely to represent a very small proportion of total CO_2 emissions in the same proportion of the A6 corridor.

None of the rail options considered herein would reduce road traffic flows significantly enough to deliver any improvements in terms of air quality in this respect.

17.10 SCHEME ENVIRONMENTAL MANAGEMENT

Due to the environmental sensitivity of the area, specific actions would be needed during Scheme construction and operation in order to manage the potential for environmental impacts/effects. During scheme construction this would require the preparation and effective implementation of a Construction Environmental Plan (CEMP), whilst during operation this would entail adherence to an Environmental Management Plan (EMP) for Line Operation.

17.11 WIDER SCHEME EFFECTS

Scheme development would have the potential to generate environmental impacts beyond the boundary of the railway corridor. This includes the following:

- environmental impacts associated with the relocated Monsal Trail;
- impacts associated with the increased rate of mineral extraction given that some freight using the line would be new mineral freight and not freight currently using the existing road network;
- environmental impacts associated with the need to relocate displaced industrial units;
- impacts associated with increase tourist demands;
- impacts upon local housing (particularly price) and the resultant problems of social exclusion;
- impacts associated with access to sites of ecological importance;
- social benefits associated with the provision of extra bus routes servicing new train stations and the use of stations as focal points by visitors etc.

17.12 SUMMARY

The sections above highlight that reopening of the Derby to Manchester Railway, Matlock to Buxton/Chinley Link would have the potential to impact upon the environment both during its construction and its operation.

These effects include impacts upon area ecology, noise/vibration/air sensitive receptors, archaeological resources, water resources, soils and geology, as well as landscape/visual receptors and other recreational users.

Some environmental effects anticipated are common to all Scheme options being considered, however, the appraisal highlights that environmental effects increase as track usage intensifies. This is especially the case with the introduction of freight, which significantly increases impacts associated with noise. On the basis of the assessments undertaken, the options considered are ranked as follows, in order of increasing potential environmental effects.

- Option 3 - non-rail option;
- Options 1A and 2A - single track, low specification passenger only options;
- Options 1B and 2B – single track, high specification passenger only options;
- Options 1C and 2C – single track, low specification passenger plus freight options;
- Options 1D and 2D – double track, high specification passenger plus freight options.

Overall, the appraisal concludes that should the scheme be taken forward, there is a potential for environmental effects that increase as the track usage specification increases. In addition, the railway scheme as currently proposed does not appear to deliver any significant environmental benefits associated with modal shift from road to rail. As such, there appears to be an imbalance between environmental benefits and disbenefits.

18. FUNDING SOURCES AND DELIVERY MECHANISMS

18.1 BACKGROUND

It will be clear to all parties that a local transport scheme of this size will only proceed if substantial funding for the project is available from central government. The main route for local authorities to seek approval and funding for major transport schemes is through the Local Transport Plan (LTP). However, the Department of Transport (DfT) has clearly indicated that heavy rail schemes should be submitted directly to the Strategic Rail Authority (SRA) for appraisal. Some heavy rail schemes such as the Derby to Manchester project may nevertheless have significant elements related to integration with other modes which are outside the remit of SRA funding and for which LTP funding is more appropriate.

Volume 1B contains a detailed review of funding and delivery mechanisms. The broad conclusions are set out below.

18.2 FUNDING CONCLUSIONS

At this stage any conclusions on the way forward for funding of the project can only be tentative. The stakeholders have first to decide on whether to proceed to a second phase of the feasibility study that would develop in detail a preferred option for the project. It will be at that stage that more specific recommendations on the future funding of the railway will be appropriate. Those recommendations will need to be informed by more detailed discussions about the project with the SRA, DfT and others than has so far occurred. However, this initial review of potential sources of funding does lead to a number of pointers to the way in which the promoters should look to take the project forward from a funding perspective:

- If the stakeholders decide to take the feasibility study forward into its planned second phase of detailed development of a preferred option, it will be desirable to seek to enter into early discussions with both the SRA and the DfT about how the appraisal of the project is to be handled. These discussions will need to confirm that separate but parallel submissions for Rail Passenger Partnership (RPP) and LTP funding are an acceptable way to proceed, obtain guidance on how far a common appraisal format can be adopted for the two appraisals and in particular how the dis-aggregation of benefits is to be addressed, consider how the wider economic aspects of the project can best be presented (possibly in a detailed economic impact report), and review the likely timetable for submission and consideration of the appraisals.
- In taking forward detailed development of the preferred project in the second phase of the feasibility study, it will be important to have regard to the needs of potential funding sources other than the SRA and DfT, and seek to identify elements of the project which could be the subject of discrete funding arrangements. The aim should be to separate out, and where appropriate parcel together, elements of the project which will respond to the objectives and requirements of different potential funding agencies. It will be important also to consider carefully the timescale over which support may need to be sought, so that potential funders can weigh up requests for support against their future programmes.
- Once the second phase of the feasibility study is complete, and assuming a decision is taken to proceed with further development of the project, it will be necessary to proceed as quickly as possible to submit appraisals for the project to SRA and DfT.
- Soon after a decision is taken to proceed with further development of the project, it would seem desirable to hold a briefing or briefings for potential funders to explore with them the funding requirements of the project, and what opportunities there might be for funding specific elements of the project which would match their agendas and objectives. The hope would be that these briefings could help the promoters to set a realistic target for funding of the project from local

sources which could then be made known to Government at the same time as the appraisal of the project is submitted for consideration.

18.3 STRUCTURES FOR PROJECT DELIVERY.

A key issue for further development of the project will be the way in which delivery of the construction project is to be managed and executed. In the past this would probably have been primarily a matter for the national railway infrastructure owner to handle, in conjunction with the train operator(s), and with the support of the local authority promoter(s). However, alternative approaches do exist, including seeking contractors, probably working through the medium of a privately financed Special Purpose Vehicle (SPV), willing to take on responsibility for designing, building and financing the new works. However, after completion, the SPV would then sell the new infrastructure on to Network Rail, who would take over responsibility for its continued maintenance. This Design, Build, Finance and Transfer (DBFT) approach is expected to be adopted for the extension of the East London Line recently approved by Government.

At the same time, the SRA would appear from their statements not to have ruled out the possibility of SPVs having a longer term role in the maintenance of new rail infrastructure where completely new infrastructure is being built and there are relatively few interfaces with the existing network. Adopting this approach would be akin to the Design, Build, Finance and Operate (DBFO) contracts that have been employed for several road and light rail projects under the Government's Private Finance Initiative. The relatively discrete nature of the works required for the Derby to Manchester project could perhaps lend itself to such an approach. It is possible that the viability of the project as a long-term DBFO contract could be enhanced if it were to incorporate the future maintenance of lengths of the existing rail network, south of Matlock or north of Buxton, and particularly so if it is decided that upgrade works are needed on these lengths of network, for instance at existing stations.

It will also be necessary for the promoters to consider what arrangements may be needed to take the project forward through its development phase to the point of awarding a contract for new works. At a high level, it may well be sufficient for the stakeholder arrangements that have overseen the feasibility study to continue in place. At a working level, however, there is probably a need for a stronger directing board to be established for the project that will facilitate collaboration and decision-making between the promoters (presumably Derbyshire County Council as the transport authority), their consultants and the SRA, and with Network Rail, the DfT and others as appropriate. The detail of these arrangements will to, some extent, depend on how it is decided to procure the specialist advice which will be needed to carry the project through its development, statutory procedures and tender processes.

19. ASSUMPTIONS AND RISK IDENTIFICATION

19.1 INTRODUCTION TO RISK

Risks are occurrences or events that have consequences or impact on a project – usually time, quality or cost.

Identification, analysis, control and reporting of risk are essential elements of successful project delivery. The establishment of a risk management process early in the life cycle of any project will ensure that measures are established to respond to risks or take steps to mitigate them before they occur.

Risk management is a continual process throughout the development of a project. There will be active risks at all stages of a projects evolution. The level of detail achievable depends on the stage of project development. Broader risk descriptions, more difficult to quantify, are typical in early project stages and more detailed, easier to quantify risks, are typical as design develops and project knowledge increases.

During the study, risks have been identified and recorded in the risk register which is contained in Volume 1B. The risks considered most pertinent at this stage of the project are discussed below (the reference in brackets refer to the item number within the overall risk register).

19.2 KEY RISKS

(R046) Failure to identify a project 'promoter'

The application for an Order under the Transport and Works Act (1992) has to be made by the body (Promoter) seeking to implement the works. A key requirement is to identify the Promoter – and this may be linked to issues of potential project funding. Inability to identify the Promoter will delay development of the project.

(R047) Lack of 'Options Study'

The consultation process has identified that some individuals and bodies do not consider that the alternative options (to re-opening) have been adequately studied and addressed. This study – in looking closely at a rail based solution – has built on the 'strategic' recommendations made in SPITS and Regional Planning Policy. There remains a risk that, at any future Transport and Works Act Public Inquiry, objectors may challenge the 'proven' need for the scheme – especially since it passes through a National Park.

(R053) Objections to new route for Monsal Trail

The creation of a replacement to the Monsal Trail will be a substantial project in its own right. The creation of an acceptable alternative is a pre-requisite to Peak District National Park consent to railway re-opening. Agreeing an alignment for a replacement trail may be significantly delayed by opposition from landowners affected. This risk can, in part, be mitigated by programming development of a new trail to commence well in advance of the railway re-opening proposals.

(R073) Statutory Consultees object to the Scheme

The Application for an Order under the Transport and Works Act (1992) is likely to attract a number of objections. Any Objections raised by the bodies such as English Nature, English Heritage and the landowners – in particular, the Haddon Estate, - could affect significantly the costs of the Transport and Works Act process and its ultimate outcome.

(R089) Modern design requirements prevent location of station at Buxton

As reported earlier, a site for a new station at Buxton to suit the alignment of the route to Matlock, has been difficult to identify within the requirements of modern design standards. Whilst retaining use of the existing station is not ruled out, there are operational and signalling disadvantages. The issue remains the biggest individual risk associated with the railway infrastructure. The risk would be substantially increased if further development takes place on 'railway owned' land or on the adjacent land.

(R123) Failure to identify funding sources

Implementation of the project will depend on the identification of funding streams for both the capital cost and any operating subsidy required. This study has identified potential difficulties in capturing this funding in the present economic climate.

19.3 CONCLUSIONS

The overall risk management process has allowed the study team to identify risks that may have an impact on the success of the project. The risk assessment process has allowed management of risks to be prioritised and where possible mitigated.

The current risk register will inform any further phases of the project development and provides the project team with a comprehensive list of residual risks that will form the basis of the next stage of the risk management process.

The risks discussed above, however, each have the ability to stop or substantially delay the project.

20. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The study has been carried out during a period of rapidly changing economic circumstances for the rail industry.

The Study has included Data Collection and Review, Surveys, Analysis, Option Identification, Development and Appraisal. In addition to this there has been extensive consultation throughout the study.

Data Collection, Review and Surveys & Consultation

The main findings of this stage were:

- Much of the base material from previous studies was of value.
- National, Regional and Local Policies are supportive of the re-opening of the line in principle, however in detail, the Policies on Environment may act against re-opening, as indeed may policies restricting re-development and regeneration, thus reducing the case.
- The study area is reasonably well served by road and by commercial and supported bus services.
- Market research shows that overall whilst there is strong support for the concept of railway re-opening there was also significant opposition arising primarily from potential environment effects and loss of the present Monsal Trail.
- Of those opposing there was also a strong view that money could be invested on other issues (both transport and non-transport related) to be of more benefit to the local community.
- The existing land-use policies will limit regeneration potential.

Analysis and Option Identification

For the railway generally:-:

- There were no “show-stoppers” from engineering, operations or environmental perspectives. However, there were many sensitive environmental issues to be addressed including the proximity of the route to Candidate Special Areas of Conservation (cSAC).

For passenger service options:-

- Realistically a maximum speed of 75mph was likely, thus journey times between Derby/East Midlands and Manchester via this route were likely to be comparable to those achieved by existing rail services. This suggested that the route would be more ‘rural’ than “Inter-City” in character.
- The need to meet differing markets suggested that new stations (additional to those existing between Derby and Matlock and Buxton to Manchester) would be required at Darley Dale, Rowsley, Bakewell, Great Longstone and Millers Dale. For services via Chinley, a new station was, additionally, suggested at Chapel -en-le-Frith
- The existing rail networks to north and south had significant capacity constraints that would impact on development of realistic service options.
- Use of the route via Chinley for passenger services would require significant upgrade of the signalling infrastructure.

For freight options:

- It is not likely that intermodal, wagonload or other trainload traffic would use the route.
- There was no support from either Network Rail or the SRA, for the use of the route for strategic freight purposes, as either a main route or a diversionary one.
- The only area where there are traffic flows of relevance to the project is around Buxton, where the aggregates industry forwards considerable volumes of traffic by rail. A re-opened route would shorten freight train journeys that will potentially benefit some existing flows and generate some new flows. A range of between 4 and 10 loaded trains per day has been forecast.

The service patterns, with operation via either Buxton or Chinley, identified for further investigation were as set out below. These were considered adequate to identify any 'step changes' in cost or timetabling implications and to enable the 'sensitivity' of various aspects to be investigated.

- A 'Low Specification' Passenger only service consisting of one train per hour in each direction, with journey times based on a line speed of 50mph. (Referenced as Option 1A, via Buxton and 2A, via Chinley)
- A 'High Specification' Passenger only service consisting of two trains per hour in each direction (one stopping at all stations, one calling only at principal stations), with journey times based on a line speed of 75mph. (Referenced as Option 1B, via Buxton and 2B, via Chinley)

Freight capacity was assessed as requiring an additional train path per hour overlaid on the passenger options above. Freight options therefore became Options 1C, 1D, 2C and 2D respectively.

Non-rail options were also considered. A bus based solution is seen as the only likely practicable alternative although this fails to meet several of the study objectives. Even with expenditure on the creation of a 'Quality Bus Corridor' with enhanced service frequencies, road congestion outside of the corridor will lead to increasingly uncompetitive journey times.

A number of complementary measures were identified for assessment including 'hearts and minds' initiatives, linked bus services and road traffic restraint measures. Whilst all have a part to play in a transportation strategy the overall effect on rail patronage is likely to be small in percentage terms. Implementation of complementary measures will need consideration on a 'case by case' and 'location by location' basis taking into account the costs and assessed benefits.

Option Development

The key issues to emerge from this were:-

- Significantly different levels of railway infrastructure are required to support the different service options. In particular all options other than 1A and 2A would require the upgrading of the line between Ambergate and Matlock to double track.
- There is considerable work to upgrade the currently freight-only route via Chinley and this remains a key risk in using that route.
- Achieving a new station at Buxton, to suit the through route to Matlock, would be difficult due to geometric, topographic and land use constraints. Two solutions exist. However, a new 'through station' will have less than ideal access from the town centre. Retention of the existing station will result in a need to reverse trains into it – leading to extension of overall journey times.
- Practicable alternatives exist for a replacement Monsal Trail.
- In environmental terms all the options are broadly similar in effect. However, the freight options – with services operating at night – have significant additional noise issues.

The Capital Costs of the different options are:

	Services Via Buxton			
Option	1A	1B	1C	1D
	£84,100,000	£103,600,000	£108,850,000	£119,500,000

	Services Via Chinley			
Option	2A	2B	2C	2D
	£89,500,000	£107,900,000	£113,100,000	£123,600,000

Option Appraisal

Demand Forecasting

The transport model developed by this study has been based on the Midman Transport Model, which was developed and used to assess strategies and measures in the Midlands to North-West Conurbations Multi Modal Study. This has been adapted for the study by a range of measures including : updating input data; increasing the number of zones within the study area; coding in the rail services; and using additional traffic data captured during the study.

An 'opening date' for the railway of 2011 has been assumed. The model has been used to forecast for the years 2011, 2031 and 2041.

Forecasts have been made for the overall study area (broadly the whole of the Peak District National Park plus Matlock to Ambergate and the Buxton area) and for a narrower core corridor (enveloping the rail route and A6). The forecasts include a 'Do – minimum' scenario Reference Case (i.e retaining the status quo in terms of public transport).

Key forecasts:-

- road vehicle-kilometres increasing by 139% (i.e more than doubling) in the rail corridor by 2041 in the Reference Case ('do minimum/status quo').
- Rail passenger volumes increasing by 105% in the rail corridor by 2041 in the Reference Case ('do minimum/status quo'). The main components of this increase are general growth in rail patronage and some mode switch to rail caused by increasing congestion on the road network.
- Implementation of the high specification (twice hourly) service via Buxton results in further passenger growth of 49% (over and above the growth in the Reference Case) in 2041.
- The higher specification service via Chinley results in further passenger growth of 105% (over and above the growth in the Reference Case) in 2041.
- In 2041, a re-opened railway is forecast to result in 920,000 fewer car movements per year in the study corridor when compared to the 'Do Minimum' situation. However, this is only approximately 2% of predicted traffic.
- Some of the increases in passenger volumes between Manchester and Derby both on the 'via Chinley' and 'via Buxton' routes arise from passengers diverting from the alternative routes running through Sheffield in the North and Stoke in the South. However, this could be considered to be beneficial overall as seating capacity would be released on the other routes as a consequence.

- Compared to the Reference Case, introducing some restraint to motor vehicles in the Peak District National Park (modelled as an Area Charge) deters some people from using the road network and encourage increased use of rail. This is reflected in the 7% reduction in vehicle kilometres in the study area and an increase of 167% in rail passenger kilometres along the core rail corridor.

Financial and Economic

The approach taken to the Financial and Economic Cost Benefit Analysis has been to use the Strategic Rail Authority's Appraisal Criteria documents of April 2003. These follow the approach outlined in the Guidance on Methodology for Multi Modal Studies (GOMMMS), and are in line with Treasury Guidance of Appraisal and Evaluation in Central Government (The "Green Book").

The options have been assessed in terms of Net Present Value, Transport Economic Efficiency and Annual operating profit or deficit. The results have been subject to sensitivity testing for changes in operating cost, revenue and capital costs.

Environmental Appraisal

Reopening of the railway would have the potential to impact upon the environment both during its construction and its operation. These effect include impacts upon area ecology, noise/vibration/air sensitive receptors, archaeological resources, water resources, soils and geology, as well as landscape/visual receptors.

Many of the environmental effects anticipated are common to all options being considered, however, the appraisal highlights that environmental effects increase as track usage intensifies. This is especially the case with the introduction of freight, which significantly increases impacts associated with noise.

With regard to the Peak District Dales cSAC (Candidate Special Area of Conservation), it is concluded that the integrity of the cSAC would not be significantly affected but would be subject to a minor adverse effect. The nature conservation features and objectives for which this area was designated would continue to be maintained - this is mainly due to the very small amounts of landtake compared to the overall size of the cSAC. With appropriate mitigation, no adverse effects should occur as to affect the nature conservation importance of the River Wye SSSI.

CONCLUSIONS

The study has been carried out against a background of a rapidly changing national railway industry in both structural and economic terms. These changes are likely to continue in the near future.

The railway would clearly assist in achieving many of the Themes of the Derbyshire Local Transport Plan, in particular Better Travel Choice, Successful Local Economies, a Better Managed Road Network and Low Impact Leisure.

Current policy is supportive of the scheme, previous studies have been favourable, and consultation showed good support. However, the results of the study show a clear deficit in benefits to justify the capital costs of re-opening by 2011 or soon afterwards. This is based on the railway being part of the National Rail network and assessed – in capital and operating costs terms - accordingly. Network Rail and the Strategic Rail Authority have both expressed the view that the Hope Valley Line between Chinley and Sheffield has sufficient medium term capacity for both freight and passenger rail traffic growth. In the light of this we have not been able to attribute to the route any financial benefits arising from the additional overall rail network capacity (or the potential to carry emergency or planned service diversions), which the link would create.

In the longer term (2025 onwards), however, the economic assessment for the railway is forecast to be much better. A significant increase in road traffic is predicted in the corridor by 2041 and the railway is predicted to be able to slightly reduce this increase. The railway would, further, facilitate a greater reduction in the rate of traffic growth if combined with some form of road traffic restraint. Rail passenger traffic is forecast to grow significantly nationally over the same period and there is reason to believe that such growth trends would also occur in the study corridor.

All the economic forecasts indicate that a railway operating in the latter years of the study period (2025 onwards) would have a much better financial profile than one opening in 2011 or soon after.

The best option in economic terms is a 'passenger only' railway with an hourly service. Specific provision for regular freight traffic (the only freight identified is that originating in the north of the study corridor) would require specific additional funding. However, the 'passenger only' railway would still be capable of accommodating some freight services, although not on a regular hourly basis. All options considered show a worse economic assessment than the 'Reference Case' (maintaining the status quo in terms of transport provision within the study area).

No alternative means of delivering public transport within the corridor on both a regional and local scale has been identified. If the railway is not constructed it is, therefore, likely that the 'status quo' will prevail, with limited (local) public transport being delivered by bus services.

The former railway alignment affords the only, practical, segregated route through the area for public transport. Its condition overall is very good and reinstatement of a railway would not incur the need for the significant 'new construction' activity that would be required on any other alignment.

As with all such schemes, substantial capital funding will be required and the majority of this is likely to need to come from 'public ' sources. Whilst there has been a lot of support from various parties, no firm commitments to the principle of funding have been identified, and the climate for this funding has worsened during the course of the study.

RECOMMENDATIONS

Our recommendations are that the study partners should:-

1 On the basis of the longer term demand/economic forecasts together with the fact that the route offers the only practicable future route, consider putting in place or extending the safeguarding of the corridor for future public transport use.

2 Consider how blight, consequential upon retaining the safeguarding of the route, may be removed or reduced for those most affected. Establishing a 'not before' date may be one way of achieving this.

3 In any event, limit further development until such time as a funding mechanism for delivery of the whole project can be identified. Many aspects of further potential assessment – engineering and environmental – have only a short period of 'validity' and delays in project implementation would result in the need to repeat this work to capture any changes in circumstances in the intervening period.

4 In relation to item 3, consider how private finance opportunities may be maximised to reduce the public finance element of the overall project cost. These opportunities may be influenced by the composition of the 'project delivery' organisation (e.g. the creation of a Project Board or 'Special Purpose Vehicle')

5 Consider how, if recommendation (1) is accepted, the condition of the route – and in particular the structures - can be maintained in the future to minimise future costs of railway re-instatement.