The West Coast Main Line

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Foreword

Massive improvements to the West Coast Main Line are now being delivered. New trains are entering service, upgraded infrastructure is being commissioned and new timetables are being finalised, ready for introduction later this year. Further improvements will follow in 2005 and 2008.

Much has happened since the Strategy for the West Coast Main Line was published by the SRA in June 2003. There has been very active support from within the railway industry and from the many external stakeholders with an interest in the development of safe, high quality and reliable passenger and freight services.

I know that passengers and freight customers on the route are being asked to tolerate significant levels of disruption, especially this year. The railway industry cannot yet be satisfied that it always has put the necessary information procedures in place for timely advice of changes. Our commitment is to resolve these short-comings. We ask our customers to bear with us; the result will be well worth it.

This document provides a report on progress since the Strategy was published. The key aims and objectives remain unchanged. This report confirms what has been achieved and what can be expected in the months to come. Furthermore, it also sets out more detailed information on the proposals which will be implemented over the next few years and confirms the final outputs of the upgrade and renewal programme.

Richard Bowker
Chairman and Chief Executive
Strategic Rail Authority
Executive summary

In June 2003, the SRA published the West Coast Strategy. It represented the culmination of a great cross-industry effort designed to establish a single project specification against which Network Rail could concentrate their energies. It was produced by the SRA, but relied on a very high level of collaborative input from many organisations in the railway industry and wider stakeholders. It was the subject of extensive consultation.

The Rail Regulator’s final conclusions of his Access Charges Review in December 2003, confirmed that the SRA June 2003 Strategy outputs should be taken as the reasonable requirements of Network Rail’s customers. He also provided for an extension of the delivery timescale of certain elements of the programme. Furthermore, he set out, year by year, the funds which Network Rail should be provided with and established targets for efficiency.

Since the Regulator’s determination was made, the SRA has been working closely with Network Rail, with a re-convened passenger/freight operating company steering group, and in consultation with stakeholders, to seek to develop a revised programme of activity that fits the Regulator’s determination. The outcome is reflected in the Network Rail Business Plan, submitted on 31st March 2004.

This report explains how the new timings of renewal and enhancement expenditures, and the balance of works to achieve the aims of the strategy, have been revised and updated. It sets out plans for the route, and shows how ‘constructive challenge’ of planned renewals has led to the identification of significant cost savings.

It explains how costs have been further reduced, from just below £10 billion to £7.6 billion1 from the joint work of SRA and Network Rail. As has always been the case, much of this expenditure is devoted to making good the very large element of renewal backlog over the route, built up over the last 25 years. This report acknowledges the challenges ahead, including those to the first key milestone, targeted for end September 2004, when Pendolino 125 mile/h operation is due to commence. And it also summarises the very considerable progress that has been made since summer 2003 in implementing the work on the ground.

The West Coast Strategy is designed to improve longer distance, inter-regional, regional and local passenger services and freight services in this, the busiest inter-urban mixed traffic rail corridor in Europe. It is a balanced framework, setting the commercial pressures that drive fast, long-distance services alongside the social role that a network of regional and local services plays. It provides:

- better performance (train service punctuality);
- faster and more frequent trains;
- capacity for the growth of rail freight; and
- the capability to operate services throughout the week, while providing for access to the track for engineering maintenance on a much more efficient basis.

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1Excluding Regional Renewals, which have never formed part of the West Coast Main Line project.
1. Introduction

1.1 Reason for update

Now is the appropriate time to take stock of progress since the SRA’s West Coast Strategy was published in June 2003, following the recent submission of Network Rail’s Business Plan (in March 2004).

The SRA has chosen to publish this update now because the programme of work has been refined and we believe that the many stakeholders will want clarity on the industry’s intentions and the outputs. The next few months, in the run-up to 125 mile/h service introduction in Autumn this year, will be a particularly intensive period for engineering works.

Those who depend on the route can be assured that there is a coherent plan in place.

Background

In early 2002, the Strategic Rail Authority took the lead in managing the issues surrounding modernisation of this, Britain’s key main line railway.

There was then a very urgent need to resolve the scope, outputs and delivery mechanisms for the upgrade of the route and to specify an integrated match between engineering inputs and required outputs. At that time, the very many users and potential users of the route had no firm timescales for the delivery of improved outputs. The costs of the Project were soaring, with a risk of the final infrastructure cost being over £13 billion. At that time, the various operators’ access rights and aspirations could not be fully reconciled.

Consultation

A consultation document was produced in October 2002, clarifying many issues in connection with the Project. Active consultation took place with interested parties and many constructive responses were received. These responses helped guide the SRA Strategy for the West Coast Main Line, which was published in June 2003. Outputs were more clearly specified, delivery timescales clarified and costs brought back down to below £10 billion. The Strategy clarified the priorities for the use of the route and underpinned delivery by exploiting ‘blockade type’ of site working arrangements to get the project speeded up and secure a step-change in efficiency. Arrangements were put in hand to ensure continuity of direct services over the very important connections between London and Birmingham, Manchester and Glasgow throughout with, as necessary, additional services running on parallel routes.

Progress

Recent progress includes the completion of the upgrades on four major route sections, two of which involved almost total renewal. There are now over 200 miles of track in regular use for 125 mile/h tilting trains. The Pendolino trains themselves are being delivered as expected, with completion of the order expected in summer 2004. The new track/train interface system which ensures the safe operation of tilt on the train (‘TASS’) is operating regularly for driver training and is progressing through the safety case process for full passenger operation.

There has been much work on the timetables, with extensive consultation. The September 2004 weekday timetable, which provides passengers with a step change improvement, is complete. In several cases, the SRA has had to make hard choices, as the route will be quite constrained in capacity until the later schemes are complete. Weekend services will
continue to be restricted for a few years yet, because, as anticipated in the June 2003 Strategy, the works to achieve a sustainable railway will still be in full swing. Furthermore these very schemes will also deliver the capability to sustain services over weekends in future, while giving Network Rail a major opportunity for more efficient maintenance and renewal.

There are still some final hurdles to be overcome for September 2004, both in terms of the new Pendolino trains and in terms of the infrastructure delivery for September, but overall, the SRA is encouraged by the progress being made. However, further effort is required and is being made to ensure that the arrangements for engineering possessions along the route are resolved more effectively and quickly, with customers kept better informed.

Attention has been given to improving the weak contractual arrangements which Railtrack had established. Network Rail has started to procure work efficiently because it now has a clear workscope before it.

**Phased Delivery**
The priority for detailed work in 2003 had been to fix the work scope for September 2004. Work is now nearing completion on the definition of the later stages of the Project, especially that for the 2005 upgrades for the route sections from Crewe to Liverpool, Preston and Scotland. It has proved practicable to achieve significantly improved value for money on these sections, while achieving outputs consistent with the June 2003 SRA Strategy. The consultation undertaken by the SRA supports the possibility for Network Rail to establish a series of blockades to deliver the upgrade of this line at an efficient, affordable price and with timely delivery. These works may involve closures of the route for upgrade works at weekends and public holidays and some changes to weekday line capacity.

The June 2003 Strategy explained the importance of the Rugby, Trent Valley, Stafford and related schemes. The benefits of these parts of the overall project are profound, and are especially critical to network performance, to network capacity and to the achievement of a sustainable network with good weekend access, both for customers and for maintenance and renewals (‘maintainability’). These same schemes also deliver some very valuable incremental improvements in further reducing journey times. Since summer 2003, detailed timetable work has reinforced the need for this part of the Strategy. Network Rail and its partners have developed the detail of the schemes further, clarifying the estimates and the timescales, including efficient procurement arrangements. The estimated cost of the enhancement elements within these renewal-led schemes has therefore fallen since the June 2003 Strategy.

**Committed outputs at a reduced cost**
Much of the joint work between SRA and Network Rail has concluded that input scope reductions can be made (with reduced infrastructure spend), without compromising the committed outputs of the Strategy. There are also some opportunities for improved efficiency in procurement of works.

Work has continued on gaining an understanding of the opportunities for passenger and freight service improvements after the completion of these works. The capacity of the route when the project is complete will give an opportunity for regular express train service between the various intermediate towns and cities along the route, creating more frequent regional and inter-regional links and integrating current services. This allows the longer distance trains between London, the North West and Scotland to achieve further savings in end-to-end journey times of 15-20 minutes, in comparison with the previously planned December 2005 timetable.
Completion of the Strategy in full is also critical to the achievement of growth in rail freight in the corridor. The September 2004 railway will be working very close to its robust capacity limits. When the Strategy is fully implemented, there will be more capacity for long distance and regional/local passenger services as well as 60-70% more capacity for freight. The critical bottlenecks will have been removed. This will benefit performance reliability as well as capacity.

Overall, the business case for the enhancement component of the project has improved from the position identified in June 2003, with reduced costs and improved outputs. Shorter journey times, more reliable journeys and reduced use of the busy M1/M6 motorways are of very considerable value to the national economy.

Funding and Programme
The SRA welcomed the Rail Regulator’s confirmation that the June 2003 SRA Strategy would be taken as the reasonable requirements of Network Rail’s customers and specified the required Strategy outputs within his funding settlement for Network Rail for the 2004-2009 control period. The Rail Regulator also decided that some elements of the West Coast Strategy should be deferred by 18/24 months.

The Regulator’s determination has implications in terms of funding timescales both for the enhancement and for the renewals components of the Project. In some cases, deferral of schemes would, as Network Rail confirmed in its recent Business Plan, result in a less efficient overall outcome.

Sensibly, the Rail Regulator allowed for flexibility in conforming to his December Conclusions. The SRA as Sponsor of the Project, has worked closely with Network Rail to resolve these programme issues and both scope and cost efficiencies have been achieved and an optimised delivery programme established.

Network Rail has incorporated the revised approach in their Business Plan of March 31st 2004.

1.2 The June 2003 SRA Strategy
The SRA published, in October 2002, a consultation document setting out a proposed Strategy to modernise the West Coast Main Line.

There was a need to bring to a successful conclusion both the renewal and the upgrade of the line, balancing the competing demands for increased capacity for passenger and freight traffic, while achieving more resilient performance providing for future maintenance needs and meeting continuing safety improvements.

The consultation exercise was extensive and achieved overall support for the completion of the task. The SRA acknowledged the considerable efforts made by many organisations and individuals including Members of Parliament, the Scottish Executive, the Welsh Assembly, the Rail Passenger Committees, the Passenger Transport Executives and Authorities and West Coast 250 in contributing towards the final Strategy. This was published in June 2003 with the objectives of:

- Addressing the major backlog of maintenance and renewals along the route, whilst ensuring value for money;
• Establishing sustainable and cost effective maintenance regimes;

• Providing capacity for anticipated growth in passenger and freight over the next 20-30 years with substantially faster and more competitive journey times between the major communities served by the West Coast route;

• Providing improved levels of performance, safety and reliability, which will help the railway regain lost market share, increasing the role it can play in the national and regional economies; and

• Achieving these objectives on a ‘working railway’ and allowing for the continuation of key freight and passenger traffic during the rebuilding and enhancement work.

1.3 Roles and responsibilities

The June 2003 SRA Strategy explained the arrangements which had been set up for project management and delivery and clarified the roles and responsibilities of Network Rail, the Rail Regulator and the SRA.

A Project Board was established, chaired by the Chairman of SRA with the full participation of the Executive Directors of Network Rail and with the Rail Regulator in attendance. It meets each month to review overall progress. As appropriate, other key organisations, such as Virgin Rail Group are invited to attend. The Project Board monitors progress on project delivery and is effectively a decision-making body.

The SRA acts as custodian of the West Coast Strategy. It leads a cross-industry effort to the best overall mix of passenger train services, of freight capacity and of infrastructure specification, making trade offs as needed. It does so through an ‘all industry business case’, which takes account of franchise value and external benefits as well as project costs. Simplification, abandonments and enhancements all need to be considered together when railway infrastructure assets are approaching their renewal dates.

Network Rail is responsible for project delivery, for the condition of its asset, and for operating the West Coast infrastructure. In the case of the West Coast, a recently appointed team of professional engineers from across the disciplines has brought much improved clarity in the specification of engineering requirements and in the area of ‘acceptance’ of renewed or enhanced project works into full operation.

The Rail Regulator is responsible for setting outputs and access charges for Network Rail based on efficient costs and for ensuring that the company meets its commitments.

The Operators who use the route have, through working groups, made an excellent contribution to the infrastructure specification, the timetable and are now primarily focused in planning for the implementation of the September 2004 timetable. The Operator working groups have been supported by a Network Rail timetable team.
1.4 Renewals and upgrading of the route

The outputs from renewals

Much of the physical asset base of the WCML is at or close to being ‘life expired’. The renewal of this infrastructure accounts for some 80% of the total planned spend on the Project.

The scale of renewals planned currently is as follows:

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<th>Renewal elements</th>
<th>Scale of renewal works within Project</th>
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<tr>
<td>Track</td>
<td>780 miles of track (out of a total of 1,660)</td>
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<tr>
<td>Overhead line and supplies</td>
<td>585 miles and power supplies</td>
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<tr>
<td>Cess path</td>
<td>340 miles</td>
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<tr>
<td>Switch and crossing</td>
<td>1,120 points (out of a total of 2,900)</td>
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<tr>
<td>Bridges</td>
<td>30 spans</td>
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<tr>
<td>Signalling schemes</td>
<td>Work along the length of the route, both for enhanced speeds and renewal of most of the signalling between London and Crewe and on the Manchester and Liverpool routes</td>
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Renewals are being undertaken by Network Rail, which has a duty to deliver the full programme as efficiently as possible. Several initiatives are now underway to help Network Rail deliver this requirement. These include:

- The introduction of new management and engineering controls, to minimise ‘scope creep’ in particular;

- The recent move towards more efficient and rapid delivery, through the use of ‘blockades’, and more efficient and effective possessions;

- The establishment of small teams of industry technical experts, working jointly for the SRA, Network Rail and ORR and termed ‘Constructive Challenge Teams’. These provide assurance on design, scope and programme across a variety of technical disciplines and assist with the important task of matching inputs against best value outputs;
• The implementation of effective measures for contractor cost and output control; and
• The work scope being targeted towards the delivery of a railway which can be sustained with minimum disruption to its customers and a lower cost of ownership through the ability to maintain and renew during efficient possessions in future.

Optimising maintenance and renewal costs against income
It became clear in the detailed review work that the infrastructure renewal programme could be better directed. The historic approach from Railtrack had been to renew the asset base broadly on a like for like basis. Given the long life of railway infrastructure assets, this approach meant renewing assets that were originally designed to deliver the train service in the 1960s (when most of the route was last modernised), and sometimes back to the steam age. Traffic patterns and methods of railway operation have changed and will change further, so it is sensible for the SRA as sponsor to review infrastructure specifications against traffic needs and forecasts.

Under the guidance of the SRA it has proved possible to modify the renewal programme at a number of key locations to deliver better value-for-money.

At Stafford, for example, it has proved possible to develop a layout with assistance from Network Rail and the passenger and freight operators, that reduces the complexity of pointwork and associated signalling costs but increases functionality through grade separation. The total initial cost to the rail industry of the revised layout is less than the previous estimate for renewing the existing layout on a like for like basis, yet the outputs are increased and ongoing costs reduced. The revised junction layout will reduce conflicts, so it is both safer and more durable. Line speeds are increased and, with substantially reduced signalling complexity, maintenance costs reduced. The revised layout allows Network Rail to avoid a significant amount of renewal work and offset this cost against the initial cost of the improvements. In the longer term, the asset ownership cost is reduced and performance and capacity improved by the revised layout.

The impact of the approach on the evolution of the WCML strategy can be seen on a scheme-by-scheme basis in Appendix A2.

It has always been a principle of the project that enhancements would be sought through Network Rail’s renewal programme rather than separately. These include:

• Reduction in disruption to passengers – by minimising the time the route is closed;
• Reduction in the net incremental cost to the rail industry of infrastructure change, by allowing the financial benefit from renewals avoided to offset the cost of enhancement; and
• Improvements in train performance by taking a whole route approach to the required functionality of a particular geographical layout.

This approach has entailed not only looking at the infrastructure cost of the Project, but
also at the costs and benefits to TOCs and FOCs and the new opportunities that will arise, in particular, from new rolling stock and revisions to the timetable. This review programme has continued to be inclusive, with active participation of passenger and freight operators. Ultimately it entails maximising the return to passengers and freight users on the total investment in WCRM route.

2. Progress since the publication of the June 2003 Strategy

Substantial progress has been made in implementing improvements. During this time considerable changes to train service patterns have had to be made, with alternative travel arrangements organised to minimise disruption to customers. However, some disruption, especially at weekends, will continue up to 2008.

2.1 Progress on physical works

Over recent months, there has been very significant progress with the infrastructure schemes. The Project team and its contractors have commissioned new signalling along the route, undertaken significant track renewals and overhead line works and undertaken other work required for speed enhancements.

Two of the major blockades envisaged within the SRA Strategy have been completed, with the renewal of much of the track and formation on the Colwich to Cheadle Hulme and Norton Bridge to Crewe sections of the line, bringing them up to a standard ready for 125 mile/h tilting trains and into an overall condition that can be sustained well into the future.

The freight companies and the engineering contractors have worked well with Network Rail to rebuild the railway. Here, within a blockade, one track is nearing completion and the other is being renewed ready for 125 mile/h tilting trains.

The line between Kidsgrove and Crewe has been electrified in very short timescales and under the budgeted costs. It has already proved to be invaluable in its new function as a diversionary route, and it will of course remain available as such in the years ahead.

In order to be ready for the operation of 125 mile/h tilting trains, it is necessary for the track not only to be in an alignment which is laid to better tolerances than on conventional routes, but this has to be sustained. The track renewals that had been undertaken during the early years of the Project were not always achieved to this standard, nor to the alignment for higher speed trains. Much work has therefore been required to bring these sections to a state of readiness for the September 2004 timetable requirements.
Visible progress has been made with many of the site specific schemes, such as Nuneaton, where the work to grade separate the Birmingham to Leicester line from the main West Coast route is proceeding apace.

The scale of the work has, of necessity, required many hours of engineering possession of the route. Project delivery has become much more controlled, especially over the last four months with the route being handed back to traffic at the time predicted. This is a welcome change from the previous situation, where hand-back had often been delayed and was therefore particularly disruptive to customers.

Some plans have had to be modified in the light of emerging information on deliverability, cost and risk. The most notable example is at Stockport, where a new computer based interlocking and control system had originally been proposed but where there will now simply be a thorough overhaul of the existing signalling, simultaneously with the renewal of much of the track foundations and some of the track.

In terms of the progress against the delivery of the new line speed profile for September, three sections are now operating on a daily basis at 125 mile/h tilt. Over 200 miles of track are therefore completed and the Norton Bridge to Crewe section awaits only the May resignalling to be ready. Tilting trains, both Pendolino and Voyager, are now running frequently at high speed, giving drivers the vital opportunity to receive training and experience on the new trains with tilt operational.

The installation of the ‘balises’ for control of the train tilt systems has now become a matter of routine and the remaining sections of the route are programmed for installation by July 2004, ahead of September 2004 running.

Work is underway to achieve a 125 mile/h tilting railway ready for revenue earning service in September 2004, over the important sections of route between London and Crewe.

All this has been undertaken on an operational railway, made up of 1,600 track miles, 2,800 signals and 13 major junctions with over 2,000 train movements each working day.

A number of individual Projects have been completed or are well underway to completion:

- **Colwich Junction to Cheadle Hulme completed.** 125 mile/h regular operation. Additional work was undertaken, reflecting the poor state of the track foundations, during the summer period when this line was completely closed;

- **Norton Bridge to Crewe** – **completed.** 125 mile/h tilt operation will follow the May resignalling;

- **Electrification of Crewe to Kidsgrove** – **completed** and now acting as a major diversionary route during blockades or in emergency;

- **Crewe to Cheadle Hulme** – **underway.** This is taking place at present and will be completed in May 2004;

- **Hanslope to Rugby to Atherstone** – **completed** providing 125 mile/h tilting train operation and now being used for driver training and test purposes;

- **Ledburn Junction commissioning** – **completed;**

- **Bourne End and Tring** – **underway.** These works will allow faster moves between the fast and slow lines and improved turn back facilities;
● **Platform extensions south of Northampton** – *underway*. Ensures that 12-car trains can be deployed on the Silverlink County services and provides adequate capacity both for present day needs and future growth;

● **Stockport** – *underway*. A decision was taken near the end of 2003 to retain the existing signalling arrangements rather than pursue a totally new computer based control system. This has the advantage of ensuring that a four track layout can continue to be provided from September 2004 on the busy route into Manchester; and

● **West Midlands** – *underway*. The new through platform at Wolverhampton, is planned for completion by September 2004. An improved turnback facility at Birmingham International will follow in 2005/06. The programming of the additional platform at Birmingham New Street is being reviewed as detailed work on the implementation plan has highlighted that there would be considerable service disruption to implement the scheme.

### 2.2 Engineering possessions and diversionary routes

Much of this work has been achieved through the total blockade of sections of route for a fixed longer period, in order that more efficient working practices can be applied, better safety achieved and productivity increased. It is much more efficient to completely rebuild the whole structure, than be restricted to limited overnight and weekend periods, with unproductive time to hand the railway over for works and to certify that it is ready for traffic at the end of the work. Such an approach is possible where alternative routes are available, at least for the longer-distance passenger traffic and freight. This has been possible on parts of the southern section of the West Coast Main Line and is incorporated into the design parameters in a much less disruptive way for much of the renewed railway, when completed.

The railway industry, led and supported by the SRA, has formed a number of regional Passenger Handling Groups to ensure that with such blockades, planning is managed jointly, resources are pooled and the best possible service is given to customers at difficult times. For example, with the summer 2003 closure of the route between Colwich Junction through to Cheadle Hulme via Stoke a jointly planned bus network was devised and promoted. Similar arrangements were made for further blockades including those in the Midlands and the South.

### 2.3 Alternative services

The whole railway industry worked closely together to design, organise and operate services as alternatives to the West Coast Route. In particular the London St Pancras to Manchester service (‘Project Rio’) was developed and implemented in only nine months starting in May 2003 and will be running until the main stages of work are completed in September 2004. It has become a particularly valuable service, emphasising that the railway is open for business throughout all the work. The service carried over 8,000 passengers a day from the
Manchester/Stockport area and a further 5,000 passengers a day diverted from other West Coast locations during the August Bank Holiday period 2003, when through services over the West Coast were interrupted for nine days.

The Chiltern route has also proved very valuable in offering an alternative route between the West Midlands and London. Chiltern Trains carried some 70,000 additional passengers at the August Bank Holiday period compared with a ‘normal’ holiday period. Considerable flexibility has been shown by other operators in working around the many engineering works on the route.

2.4 Thanks to people for bearing with us

The railway network remains open for business and an extensive industry wide communication exercise has been operated to ensure that information about the various activities and changes to railway services are made known to those who rely on the railway or have an interest in its development.

Grateful thanks are expressed to all passengers and freight customers who have faced inconvenience and disruption whilst this work has taken place and to the staff who have implemented the changes in a professional manner. In many instances journey times have had to be extended and in others, passengers have been transferred to bus and coach services for all or part of their journey. Whilst these have been planned and operated to a high standard, it is realised that this may have been disruptive.

The completion of the Project will result in a resilient railway capable of freight and passenger traffic growth and providing high quality intercity, regional and local services.
2.5 Forthcoming engineering activity

During the spring and summer of 2004, engineering work continues apace along the West Coast Main Line between London, the West Midlands, Crewe and Manchester. In particular, large scale blockades are planned for the Easter, Spring and August Bank Holiday periods in 2004 in order to complete a substantial volume of both upgrade and renewal work ready for the new services. This will mean, unfortunately, that passengers will face some longer rail journey times or reliance on road transport for all or part of their travel arrangements. The rail industry continues to work together to minimise such disruption, but it is felt that by undertaking such a high volume of engineering activity within a relatively short time scale, it will be possible to reduce the impact of further work after September 2004, when the new timetables are to be introduced.

This applies, in particular, to the period of the Motor Show, being held at Birmingham International over the Spring Bank Holiday. The move to this Bank Holiday period for the Motor Show was taken in the knowledge of the engineering work which had been pre-planned on the West Coast Main Line, with the direct route to and from London closed. The rail industry has, nevertheless, been working hard to ensure that there is a range of services and additional capacity, taking account of the additional rail business that the Motor Show is likely to generate.

The message remains that the railway is open for business and a comprehensive communications and publicity programme is therefore being implemented to ensure customers are fully aware of the alternative arrangements and can still travel. Further details will be available shortly. Much of this activity is concentrated in and around the West Midlands and between Rugby and Watford.

2.6 Reducing dependence of outputs on new technology

The Strategy explained how the WCRM Project had been hampered by the early inclusion of technological innovation as an additional requirement, on top of that to undertake the core renewals and enhancement schemes. The scale of the burden that this Railtrack decision imposed on the Project was significant, with negative impact on cost efficiency, delivery timescales and reliability.

Much work has therefore been directed towards the core elements of the Project, namely to enable a sustainable and enhanced West Coast Main Line to be achieved to the Strategy timescales.

Recent progress has been made with the elimination of development projects such as ERTMS Levels 1 and 2, new Network Management Centre control system development, innovative signalling systems requiring new safety cases and a reduction in the innovative elements within track components. Such innovation does not sit well with cost effective implementation against set timescales of a major Project. Nevertheless, some new technology has already been installed and work is still needed to achieve basic reliability standards. For example, 42 new safety cases were required for the installation of new technology within the renewed junction at Ledburn alone. The outputs of that junction have, however, been profoundly disappointing in terms of reliability, until the very recent progress with modifications which has now enabled conventional junction reliability levels to be attained.

Going forward on a simpler basis, the Project will become more efficient and less prone to the effects of technological risk on costs, timescales and outputs.
2.7 European Union funding

The SRA is working with the Department for Transport and other stakeholders to secure European Union funding for specific upgrade aspects of the West Coast Route Modernisation Project, as part of the financing of Trans European Transport Networks (TENs). This could include support for improved junctions and line speed upgrades which are compatible with work elsewhere in the EU to improve key transport corridors.

2.8 The consultation process

A key aspect of this work has been to ensure that stakeholders have been made aware of proposals and that they have had the opportunity to comment and contribute towards the evolution of the Strategy. Considerable contributions have been made by many organisations. These are much valued and have indeed influenced the content and outcome. In particular, the involvement of the Rail Passenger Committees, the Scottish Executive, the Welsh Assembly Government, Passenger Transport Authorities and Executives, West Coast 250 and many local authorities is greatly appreciated. The role of user groups and indeed some individuals is also acknowledged. Regular contact will continue to be made.

As an example of this activity, the initial consultation work on the options available on blockades and alternative travel arrangements, in order to carry out the upgrade work north of Preston and into Scotland, is influencing considerably the outcome of the discussions taking place between the SRA, the train operators and Network Rail.
3. Progress towards the 2004 and 2005 service improvements

Plans are well advanced for the introduction of new timetables in September 2004, although there are still a number of issues and risks which need to be overcome to ensure delivery on this date. There will be significantly improved services for the very many users of the route and an opportunity to achieve a step change in the use of rail on this most important part of the network.

3.1 Overview

This section provides a summary of the key output changes being pursued for September 2004.

One reason for deciding on this implementation date is to separate changes to West Coast related timetables from the now industry standard change dates of December and June. Previous attempts at introducing major timetable changes dependent upon completion of major engineering upgrades (such as previously on the East Coast Main Line in 1991) have shown it to be prudent to separate these from nationwide alterations.

Detailed consultation has taken place on these new services and service commitments, both on the initial drafts and, more recently, on the later versions of the timetable. Much constructive feedback has been received and, wherever practicable, incorporated into the schedules.

In order to improve the use of line capacity and performance, most services are planned on a strict regular hourly interval pattern. As a result some ‘occasional calls’ which make individual trains depart from a regular pattern have had to be restricted.

3.2 West Coast services

By September 2004, the majority of the new 125 mile/h tilting Pendolino trains will be ready for service on the upgraded route. Major improvements are therefore planned for September 2004 with additional services planned for December 2004 and into 2005, as further Pendolino rolling stock is delivered and the full fleet is available for service.

The September schedules are planned on the basis of 36 Pendolino trains being available for service each day. This is due to be increased to 42 in December 2004 and up to the maximum of 46 by June 2005. The balance of seven (within the fleet of 53) is required for maintenance and on standby duties to ensure resilience of service. It should also be noted that all of the Pendolino trains are currently being extended to nine cars, bringing much needed additional seating capacity.

From September until December 2004, there will be a requirement for a few locomotive hauled trains with Mark III vehicles (operating at 110 mile/h) to be retained to supplement the Pendolino fleet. These will be used predominantly on certain off peak or contra peak flow services on the London to West Midlands route. These older trains will be phased out as soon as additional Pendolino trains are available.
By December 2004, all these services are scheduled to be operated by Pendolinos.

Emerging ‘intercity’ journey times (see Appendix B, page 50) are broadly the same as the indicative times published in the June 2003 Strategy document. Not only will large centres such as Birmingham, Glasgow and Manchester have faster services to and from London, but other important regional centres will receive upgraded links. For example, London to Chester will be operated in 2 hours 6 minutes and London to Warrington in just under 2 hours.

Northampton is added to the West Coast Intercity route with off peak links to and from Manchester. The market for further long-distance trains will continue to be examined for Northampton, although, until the further line capacity at Rugby and in the Trent Valley is available, this will be difficult to achieve. Two early morning southbound Pendolino services will also provide Northampton with fast commuter links to London. Return late evening Pendolinos will also improve links to Northampton from London and the West Midlands.

Watford maintains its present level of West Coast services as does Milton Keynes, except at peak times where the capacity on the long-distance trains is dedicated to the longer-distance flows (see ‘London Commuter Services’ in Section 8.5).

### 3.3 CrossCountry services

The CrossCountry network is being further improved in September 2004 alongside West Coast services. The pattern of change follows that of the June 2003 Strategy document.

Manchester to Birmingham will have a regularly half hourly fast service via Macclesfield and Stoke with many trains extended to Reading and the South Coast.

There will be a new hourly pattern of fast services between West Midlands and Scotland via Crewe and the West Coast Main Line. Alternate trains will serve Glasgow and Edinburgh, with the Glasgow services starting at Plymouth or Penzance. The West Midlands to Scotland trains will have a journey time of around 4 hours, an acceleration of some 20–60 minutes by comparison with today and further accelerations in 2005, saving approximately an extra 15 minutes. These trains are in addition to the hourly Birmingham to Edinburgh service via York and the East Coast route. The West Midlands to Scotland trains are no longer to be routed via Manchester, in particular to improve reliability and to substantially reduce journey times.
Consultees requested the retention of more through links to the Thames Valley and South Coast. This has proved practicable and this through service will operate from Scotland, Cumbria and Preston via Crewe to Birmingham and Bournemouth several times a day. A two hourly service will be provided between Manchester and Scotland, generally alternating between Edinburgh and Glasgow, with a journey time of generally under 3 hours. To meet requests from stakeholders, a new early morning service is to be offered into both Edinburgh and Glasgow. This, coupled with improved evening services southbound, will give an improved service offer.

3.4 Trunk freight

In September 2004, it will be possible to continue to operate today’s volume of freight traffic, but there will have to be some changes in the times at which it can operate. Capacity is significantly constrained and hard compromises have had to be made in respect of both passenger and freight services. For example, freight traffic will be limited in both morning and evening peaks on the London to Northampton and the Trent Valley sections, but conversely, mid evening passenger services have been thinned to accommodate the displaced freight traffic.

From September 2004, the line capacity to the North of Preston is likely to be able to accommodate the new frequencies of West Coast and CrossCountry trains and the speed improvements provided by better train performance. The Strategy envisaged the use of more powerful electric traction for freight, as opposed to the use of diesels on the main line. This requirement is likely to be necessary from December 2005 when the line speeds are increased between Preston and Glasgow. Power supply upgrades are in hand to support this. Diversion of the slowest freight away from the main line may also have to be carried out.

The opportunity for any significant growth in rail freight along most of the route will, however, not be possible until the capacity of the later works is available, primarily between Rugby and Stafford, but also when the power supply and other enhancements North of Crewe are completed.

3.5 London commuter services

As the Strategy envisaged, the outer suburban trains from Euston, provided by Silverlink County services, will operate as far north as Northampton. The service beyond that point is transferred to Central Trains as part of a new Northampton to Birmingham service.

Peak hour capacity on Silverlink services is being designed to accommodate both existing traffic levels and the timetable structure also provides headroom for growth by bringing the opportunity to extend train lengths. Some five trains an hour will operate from Northampton in peak hours and three trains during the off peak.

For the Silverlink services, an interim rolling stock programme is being developed to ensure adequate capacity from September until the full entry into service of the fleet of new 100 mile/h Inter Regional Express trains in 2005. The interim arrangements are likely to consist of a small number of locomotive hauled trains and/or electric units hired in from other operators. The aim is to ensure that adequate capacity is available for the existing traffic, especially since the Silverlink County services will provide the bulk of the peak commuter service between Milton Keynes and London.
Platforms are being extended at stations served by Silverlink County services, allowing 12-car operation at all stations between London and Northampton. This is being phased in from September 2004. However, the turn back facility at Wolverton will not be provided for some time as signalling in the area does not need immediate renewal. Trains terminating at Milton Keynes will continue to use the bay platform at that station.

Slow line speeds are being increased to 100 mile/h and this will be delivered by December 2005, bringing journey time reductions.

3.6 Cross London

The existing South Central service serving Watford, via the West London Line will continue on an hourly basis. It is not possible to increase the frequency of this link, because of the large volume of traffic on the West Coast Main Line south of Watford and freight movements using the West London Line. For the present, an extension northwards beyond Watford, whilst not ruled out for the longer term, is not possible because of limited capacity. However, discussions with stakeholders, also involving Transport for London, will continue over the eventual pattern of service to be provided along this corridor.

3.7 West Midlands and Trent Valley

The service pattern is based on the framework as set out in the Strategy.

There will be a half hourly service between Birmingham and London with additional peak hour trains – southbound in the morning and northbound in the evening. Journey times will be reduced to around 1 hour 30 minutes with trains making use of the 125 mile/h tilting capability between Rugby and London. Some off peak and evening services will continue to be operated with 110 mile/h rolling stock on a temporary basis until December 2004.

The through link with London, provided by Silverlink and as previously advised, will be discontinued. Whilst this is used by a small number of customers, the need to maintain resilient operation is essential, especially on the busy corridors and whilst the rebuilding of the Rugby station area is carried out. The Chiltern Railways service between Birmingham and London (Marylebone) will, of course, continue to operate over a parallel route.

Central Trains will commence operating an hourly Northampton to Coventry to Birmingham International to New Street service taking over from the Silverlink operation. The Central service is not able to operate more frequently between Coventry and Northampton at this stage, again because of capacity limitations at Rugby station.

The new Inter Regional Express trains will have a modern interior well suited for medium and longer-distance journeys (‘Intercity’ style tables have been specified since this artist’s impression was prepared).
Other developments include the provision of a new through link between Walsall and Birmingham International and the revised intercity service between Birmingham and Liverpool, which will be operated, from mid 2005, by 4-car 100 mile/h Inter Regional Express Trains.

Until the capacity improvements are completed along the Trent Valley, the stopping pattern of long-distance trains along the Trent Valley though Lichfield and Tamworth is restricted. A limited number of trains will call at these stations to serve key peak markets.

For a period of some twelve months, the sparse and little used local train service along the Trent Valley, together with the service between Coventry and Nuneaton will be replaced by timetabled buses. At weekends this is necessary anyway due to the ongoing engineering works at Nuneaton and in the Trent Valley. Central Trains is continuing a significant change and expansion of its services requiring more train crews, as well as the need to introduce new rolling stock. It is essential that the very important and heavily loaded urban and interurban services of Central Trains are prioritised.

3.8 North Wales

The present Monday to Friday service of London to North Wales of three through services a day will be increased to five, with most operated by 5-car tilting 125 mile/h Super Voyager trains. One of these trains will provide Llandudno with a new through London service. It is planned to use a 9-car Pendolino train on the more heavily loaded 0538 from Holyhead and the 1721 return journey from London, diesel hauled west of Crewe. Pendolinos will also be deployed on more of the services from summer 2005.

Additional experimental calls have been provided at Flint in response to local requests for improved links with London.

The Holyhead to Crewe service will operate broadly hourly, with certain extra trains, but integrated, as far as practicable, with the West Coast services. There will also be an hourly shuttle service between Chester and Crewe to give a half hourly combined frequency over this section.

3.9 Manchester area

A key aspect of the West Coast upgrade will be the provision of a much improved service between London and Manchester. Two trains an hour will be operated for over 12 hours of the day. One will be a fast service calling only at Stoke on Trent and Stockport with a journey time of around 2 hours 10 minutes. The other service will take only slightly longer with additional calls at Watford or Milton Keynes and Macclesfield.

There will be a morning peak fast train calling only at Stockport and a range of extra services serving the route via Wilmslow, bringing additional end to end capacity.

Whilst the track and signalling layout at Stockport will remain unchanged, there is a need to make changes to local services and in particular a reduction in the frequency of the relatively lightly used off peak Manchester to Hazel Grove shuttles in order to accommodate the extra long distance trains. These shuttle services become hourly, but when combined with the Blackpool to Buxton service, a half hourly frequency will still be provided.
Other changes are being made to local services. For example, there will be a revised Manchester to Crewe via Manchester Airport link allowing a new Liverpool to Manchester Airport service (see Section 8.11) to be speeded up to run non stop between Manchester and the Airport. Furthermore, a new regular half hourly Manchester Oxford Road to Liverpool local service via Warrington is also planned.

The timetables also anticipate the changes required for the TransPennine route trains in the Manchester area in December 2004.

3.10 North Staffordshire

Stoke-on-Trent will receive a much improved service with London, offering two trains an hour with a journey time between approximately 1 hour 30 minutes and 1 hour 40 minutes.

For the same reasons explained above, it may also be necessary to replace the Stoke to Stafford local service with timetabled buses for a period. It should be noted that when this was operated by road transport for many months due to engineering works, many passengers gave positive feedback on the revised arrangements.

3.11 Liverpool

There will be an hourly service between London and Liverpool with a journey time reduced to 2 hours 30 minutes. There will be a faster ‘business’ train (in 2 hours 20 minutes) leaving Liverpool at 0715, calling only at Runcorn and Stafford. These services will be accelerated in 2005 when the next stage of line speed improvements is completed. Overall route capacity constraints preclude further acceleration until the proposed 2008 timetable.

Runcorn and Liverpool will benefit from improved frequencies to the West Midlands in 2004 and the new 4-car Inter Regional Express electric trains when delivered in 2005.

Improved links with Manchester Airport are to be provided. The hourly fast Liverpool to Manchester Victoria service is being rerouted via Piccadilly to the Airport. This will provide an attractive end to end journey time of just over an hour at a regular hourly frequency, compared with today’s more irregular service and a journey time of over 1 hour 30 minutes.

Whilst not due to be opened until the end of 2005, the SRA is currently working with Merseytravel to facilitate the provision of the new Liverpool South Parkway station, including the study of train service patterns.

An impression of the new Inter Regional Express 100 mile/h electric
3.12 Preston and Lancashire

Preston and the key centres of Warrington, Wigan and Lancaster intermediate points will receive the hourly service as set out in the Strategy, with additional fast trains giving a fastest London to Preston journey time of 2 hours 15 minutes. An hourly Liverpool to Blackpool through link will also be created.

3.13 Cumbria and Scotland services

Improved journey times are delivered, with nine services between London and Glasgow, and a single journey in each direction to and from Edinburgh, the Edinburgh service operating at a time which enables a very attractive Glasgow to London fast service to be provided. The London to Glasgow corridor will receive two of these fast services in each direction, offering initially a journey time of 4 hours 40 minutes with later accelerations. An opportunity will therefore exist to exploit the railway as a quality alternative to air on this Anglo-Scottish corridor. Twelve London trains will serve Carlisle, with most calling at the Cumbrian railheads of Oxenholme and Penrith.

3.14 International passenger services

The situation remains unchanged since the publication of the Strategy document in June 2003. Opportunities to operate international services are being explored further. However, any such consideration will need to take account of the likely need for a new build of rolling stock, the long term business case and continuing impact of the airline industry (especially the ‘low cost’ operators) on the potential business opportunities on such long distances. The route capacity issues for long distance non tilting trains on the West Coast Main Line remain.

3.15 Performance

A significant amount of cross industry work is underway to establish the optimal way in which the route will be managed and operated. This is including a study of the contingency arrangements, the policies for train regulation, perturbation management, infrastructure fault response arrangements and the processes for ensuring that close liaison is maintained between operators and Network Rail. Network Rail is also planning to strengthen its route wide control arrangements to direct priorities between local control centres and to consider the network wide effects of train running decisions.

3.16 Weekend services

Although improved trains services are being introduced from September 2004 onwards, weekend services will still be liable to some disruption as engineering work continues. There will be some ongoing weekend diversions, but route closures will be limited to public holiday periods.

This is likely to apply through to 2008 when the full upgrade is complete and an altogether more competitive weekend timetable brought into operation.

3.17 Rolling stock

The full fleet of 53 9-car Pendolino trains will be available for service by June 2005 and the timetable structure has been designed accordingly. 5-car Voyager trains will be deployed on some of the London to North Wales services and on the West Midlands to Scotland route.
The Manchester to Birmingham CrossCountry services will be operated by a mixture of 4-car and 5-car Voyagers and 4-car Voyagers will be deployed on the Manchester to Scotland CrossCountry route.

Thirty 100 mile/h Inter Regional Express trains, are under construction for the West Coast route. There is therefore the task of commissioning and introducing these new trains, including the planning and implementation of a modern maintenance depot at Northampton. The units will be to a specification suitable for both long-distance and peak period commuter traffic, thus providing flexibility in their allocation. They are due to be introduced in 2005. These will be used regularly on certain Silverlink services including the peak Tring to Euston local service, where their fast acceleration is needed to maintain the timetable and to ensure maximum use of the line's capacity. Off peak, they will be used on the London to Northampton line, particularly on the express services. These trains will also be used to provide services such as the Liverpool to Birmingham and also the Preston to Birmingham fast Inter Regional links.

3.18 June and December 2005 timetable improvements

It should be noted that whilst the September/December 2004 timetables represent a major step change, further progressive improvements are planned for 2005.

It is unlikely that there will be significant changes to the core structure of the September and December 2004 timetables for a number of years. This will be a period of consolidation, with major engineering work still taking place along the route until completion, particularly – as the June 2003 Strategy made clear – at weekends. Capacity will be constrained by the limits of the infrastructure in the Rugby and Trent Valley areas, as work continues on the renewals and upgrade.

The introduction of the 30 new Inter Regional electric multiple units in mid 2005 will enable the implementation of the full timetable pattern on the routes between Birmingham and Liverpool and Birmingham and Preston. In turn, this will enable the further acceleration of CrossCountry services between Birmingham and Scotland.

Some notable journey time reductions take place after 2004, most significantly with the delivery of improved line speeds between Crewe and Liverpool and Crewe and Preston in June 2005 and the major step up in speeds between Preston and Glasgow in December 2005.

It is expected that the completion of the works at Euxton Junction and at Wigan will be able to be combined with the further speed gains on the Colwich to Cheadle Hulme line in a full recasting of the timetable, but not the service patterns themselves, in the Manchester area. This will enable the incremental September 2004 and the December 2004 TransPennine changes to be consolidated into a new, better structured, timetable.

Line speed improvements to the south of Rugby will continue, as the slow line speed from London to Northampton is progressively increased from 90 to 100 mile/h and the final stages of the fast line speed increases are incorporated into schedules.

Major changes will, however, have to wait until some key stages of the infrastructure works are delivered, bringing increased capacity and removing some of the constraints which limit flexibility in the September 2004 timetable.
3.19 Stations

Work continues, in particular on the identification of locations where additional car parking should and can be provided, along with other station enhancements to meet the expected growth in passenger business.

3.20 Franchise position

The SRA Strategy explained the steps which had to be taken to implement the new service patterns and commitments.

The SRA is currently defining the new or revised franchise agreements as appropriate so that these contain and reflect the requirements of the West Coast Strategy, in terms of services and performance, as set out in the June 2003 document and in this Progress Report.

The timetables and requirements, as consulted, for West Coast Trains and CrossCountry Trains on the West Coast route will form the basis of the proposed Service Level Commitments for these franchises.

The SRA is examining an extension to the current Silverlink Trains Franchise Agreement. The current Agreement is due to expire in October 2004 and an extension would be for approximately two years. It would incorporate provision for the introduction of the new 100 mile/h Inter Regional Express trains, the associated depot works at Northampton, the train maintenance contract and the operation of the revised timetables.

The Central Trains franchise will take account of the substantially changed pattern of services to be provided by this train operating company. It will have responsibility for the provision of two further key regional intercity services to Liverpool and Preston, as well as an expanded role in the operation of local services in the West Midlands, including the link with Northampton.

3.21 Key challenges in the period to September 2004

The substantial scope and magnitude of the West Coast Route Modernisation Project provides significant challenge in itself. However, implementation being undertaken whilst continuing to operate existing train services represents a significant engineering, financial and logistical challenge. As with any Project of this scale these challenges generate potential risk to delivery.

An analysis of the Project requirements for September 2004 has identified four key challenges:

● Delivery and reliability of new train sets;
● Training of drivers for the Class 390 Pendolino train sets at 125 mile/h and with tilt operational;
● Completion of the required infrastructure works;
● Approval of safety cases and other formal requirements.

For each of these challenges, cost benefit studies and risk mitigation measures have been identified and implemented to reduce risk to tolerable levels. There is continuous cross industry monitoring and updating of any emerging risks with appropriate mitigation actions to secure optimum Project delivery.
4. **The Project beyond 2004/05**

The Rail Regulator has confirmed in his conclusions that he wishes the outputs of the West Coast Project to be delivered in a manner consistent with the June 2003 SRA Strategy but within a revised budget reflecting a higher level of efficiency and with some different timescales for delivery of particular site specific schemes. Details are given on the final outputs of the strategy for both freight and passenger. The plans for ongoing maintenance arrangements to ensure the route is kept fully sustainable and does not degrade again are described.

4.1 **Funding**

The Project cost estimate as at June 2003 was capped at £9.9 billion (2002/03 price level), as compared with a summer 2002 Project baseline which exceeded £13 billion. Further scope reductions and cost efficiencies over the period since June 2003 have reduced this estimate to around £7.6 billion.

The recent Network Rail 2004 Business Plan shows how the funds going forward will be expended.

4.2 **Schedule**

The SRA's Strategy explained that the aim for delivery of renewals was to bring together ‘renewal’ and ‘enhancement upgrade’ works and their associated possessions to achieve more cost effective and less disruptive Project delivery.

The Rail Regulator determined that the timing of renewals of particular major site specific schemes, such as Rugby and Trent Valley line, planned to be delivered beyond March 2006, should be deferred by 18/24 months in order to improve the achievement of efficiencies. The timing of enhancement expenditure was unchanged. However, flexibility exists for Network Rail to produce a programme which delivers efficiency, providing the funding ceiling is not exceeded.

Since the publication of the Rail Regulator’s conclusions, the SRA and Network Rail have been jointly reviewing the impact on the Project. The aim of the review was to achieve the outputs of the strategy as agreed by the Regulator in timescales and at efficiency levels which have the best overall industry business case.

The team established that some works needed to be reprioritised to more closely match renewal needs, and that in some cases abandonments are appropriate as an alternative to renewals. However, the outputs still meet the SRA Strategy requirements for the route as other gains have been identified from changing long term track renewal arrangements and their associated engineering allowances in the timetable. Detailed descriptions of the scope of work for the major schemes (shown opposite) are given in Appendix A2, and the most likely dates for completion of the schemes are detailed in Appendix A3. The net effect on overall timescales is that the Project (other than Stafford remodelling), which was due to be complete in 2007/08 (and, although not explicitly identified in the June 2003 Strategy, this was taken to be May 2008), will be completed in 2008; later, but still in time for the December timetable change that year.

The schedule of works position is inevitably complex, it can be best be summarised in a diagram (shown opposite). This shows how the timings as implied by the Regulator’s determination on the Project spend profile, year by year, have been adapted. Some works are brought forward (for instance, Nuneaton Phase II), while in general, renewals and...
### Timing of Larger Scale WCRM Works

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**31.03.04**

Renewals and enhancement delivery profile, implied by the Regulator’s conclusions on funding timescales

**31.03.09**

Revised plan for renewals and enhancement delivery

Enhancements have been brought into line. The timing of the scheme at Stafford which depends on planning consent, a detailed staging plan and affordability is currently being finalised; it straddles the Regulator’s control period which runs through to March 2009.

The joint review by the SRA and Network Rail also established further scope reductions based on a re-assessment of the line speed profile and its impact on the need for work to achieve Enhanced Permissible Speeds (EPS), particularly between Coventry and Birmingham and north of Crewe.

As an example, the speed of trains along the Coventry to Birmingham route is restricted by a tunnel at Beechwood and by the deceleration and acceleration profiles of trains calling at Coventry and Birmingham International, such that only a few seconds could be saved by raising line speeds to 125 mile/h, yet the costs of so doing are significant.

Accordingly, the line speed will now initially be raised from 100 mile/h to 110 mile/h. In due course, as renewals take place, incremental further speed gains can be realised. Thus, costs have been reduced and inefficient parts of the programme dropped or re-timed.
**Weaver to Glasgow**

The Line Speed Profile for the northern part of the route has been reviewed to match the performance characteristics of the new trains. 125 mile/h running will be achieved along many route sections. The December 2005 outputs will be delivered through a combination of enhancements associated with renewals, abandonments (removal of unnecessary switch/crossings) and maintenance enhancements e.g. the use of Dynamic Track Stabilisers. The renewals programme continues until December 2008, allowing for cost efficiencies to be realised while still supporting the final timetabling change in December 2008. The overall proportion of project infrastructure expenditure that lies within Scotland is unchanged from the Strategy published last year.

### 4.3 Efficiencies

The SRA strategy of delivering the major site specific schemes in timescales which combine renewal and enhancement work is substantially refined. Schemes will be developed to the level of design necessary so that they can be efficiently procured.

### 4.4 Summary of outputs overall

The West Coast Route will continue to be the most heavily-trafficked multi-use trunk axis of the national railway network. The capacity and capability after the completion of this West Coast Project will reinforce that position:

- For passengers, it will offer an excellent high speed intercity passenger link between London and the large cities and conurbations in Britain, in the West Midlands, Manchester, Merseyside, Lancashire, Cumbria, North Wales and Scotland.

- It will serve a key part in the suburban commuting network of London and of the major conurbations on the West Coast corridor.

- Regional Express passenger services connecting the conurbations with their economic hinterlands, with each other and with cities elsewhere use substantial lengths of the West Coast Route, or intersect with it over shorter-distances.

- The West Coast is also the country’s most important trunk route for freight. It is used over substantial distances – of between 100 and 400 miles – by nearly half of the freight trains that operate in Britain as a whole. Its freight traffic includes trains connecting the Midlands, north-west England and Scotland with mainland Europe via the Channel Tunnel, and with the deep-sea ports of Felixstowe, Southampton, Tilbury and the Medway, coal from or imported via Scotland to electricity generating stations in England, and trains which must meet the demanding specifications of the distribution, logistics and nuclear power industries.

The process for development of the West Coast Route timetable for 2008 and later will build on the input and involvement of passenger and freight train operating companies, and consultation with PTEs, county councils, user groups and other stakeholders, which has helped to optimise the timetable for 2004/05.

Journey times of West Coast services will be shorter, and CrossCountry services will be accelerated between Crewe and Scotland. As far as possible, other services on the route will, by optimising the timetable and with the improved use of capacity, also be accelerated.

Services throughout the route will benefit from the improved performance of the modernised infrastructure, including the strengthened power supply system, and from the continuing
introduction of new rolling stock. The performance benefits of the 2004/05 timetables, simplifying some of the train services which currently have the greatest operational complexity, will be retained in later timetables.

The initial proposals for the 2008 timetable are outlined here by train operator and service group. Where services are described as 'unchanged' this refers to their core frequencies and approximate journey times. The opportunity may be taken in revising the network timetable to incorporate improved West Coast services to change the paths within each hour used by other services, giving improvements in infrastructure capacity utilisation, performance, and connections. This may include making marginal changes in the origins and destinations of some shorter-distance services, to give overall benefits to the network and to users as a whole.

**West Coast Trains**
The timetable for the period beyond 2008 will reflect fully the benefits of the continued programme of line speed improvements and of the reduction in temporary speed restrictions necessary while the work remains under way, particularly at Rugby and north of Crewe. This will give further reductions in end-to-end journey times. The deployment of the fleet of class 390 trains will be optimised to reflect the evolution of the market in the first years of the accelerated timetable, to reduce intermediate calls on some long-distance services and thus to give significant further journey time reductions between the most important traffic centres such as London to Liverpool, Lancashire, Cumbria and Scotland. The faster journeys of Virgin West Coast services and the availability of the new 100 mile/h Inter Regional Express trains for middle-distance journeys will allow better value to be realised from the new 125 mile/h tilting Pendolinos and permit frequencies to be increased on key routes, especially between London and the West Midlands and London and Lancashire, Cumbria and Glasgow.

Projected frequencies and planned journey times from 2004 through to 2008 are illustrated in Appendix B, page 48.

**CrossCountry Trains**
Services between South West England, the South Coast, Gatwick and Reading, the West Midlands, Manchester, and Scotland will benefit from higher speeds on the northern part of the West Coast Route.

**Freight**
The timetable work for September 2004 has reinforced the critical importance of the 2004 – 2008 infrastructure schemes if any growth above today’s traffic level is to be achieved along certain constrained sections of route. As envisaged by the June 2003 Strategy, the use of powerful electric traction for freight, which enables much higher speeds on the uphill sections, will be essential if this traffic is to be increased on the primarily double track section between Preston and Glasgow. There is no shortage of suitable electric locomotives. Slow moving heavy diesel trains would have to be diverted onto other routes during the daytime if the overall quantum of traffic is to be increased on this section.
When the schemes are completed, the available capacity for freight will at least match that contained in the June 2003 Strategy.

*TransPennine*

Services between Barrow-in-Furness, Windermere, Preston, Liverpool Lime Street, Manchester Airport, Manchester Piccadilly, Yorkshire and North East England remain unchanged from those already planned under this new franchise.

*Arriva Trains Wales*

Services between Cardiff and Manchester remain unchanged. Other potential service changes are currently in consultation as part of the development of the new franchise.

*Central (long-distance)*

The deployment of the fleet of new Inter Regional Express electric trains will be optimised to reflect the evolution of the market in the first years of the improved timetable between Birmingham and Liverpool and Preston. It may be possible to operate additional middle-distance services on parts of the West Coast Route with these trains, improving the frequency of intermediate calls, accelerating longer-distance services, and aiding efficient use of infrastructure capacity. Services between London and Rugby and intermediate stations to Stafford will be included in the study of this service integration opportunity. Other Central long-distance services will be generally unchanged.

*Central West Midlands (including Centro PTE)*

Unchanged in overall frequency. The Northampton to Coventry to Birmingham local service will be able to operate at a higher half hourly frequency as a result of the completion of the works at Rugby. The Trent Valley local and Rugeley to Stafford services will be included in the study of middle-distance services between London, Stafford, Stoke and Crewe.

*Northern (including Greater Manchester and Merseyside PTEs)*

Unchanged in overall frequency. The pattern of local and regional services in Greater Manchester will be reviewed with GMPTE with the objective of improving the service on key flows and structuring the timetable to give maximum reliability on the available infrastructure.

*ScotRail (including Strathclyde PTE)*

Strathclyde PTE services remain unchanged and include provision for the proposed new services to Larkhall. Caledonian Sleepers also remain unchanged, but with possible scheduled use of alternative routes for part of week/year under the maintenance strategy.
**GNER**
London Kings Cross to Glasgow: unchanged

**Silverlink (London to Watford to Milton Keynes to Northampton)**
Unchanged in overall frequency, but adjusted to strengthen the service between key growth centres, especially Milton Keynes to London. As growth in this flow and on the longer-distance West Coast services occurs, the off peak traffic is likely to be carried on improved Silverlink fast services and long-distance train capacity more dedicated to the longer-distance markets.

**South Central (Cross London services to Watford Junction)**
Unchanged, one train per hour each way, with capacity expected to be constrained by the increased Silverlink and freight services on the slow lines and junction constraints on the West Coast as well as on the West London route and south of Clapham Junction.

4.5 Business Case appraisal

The June 2003 Strategy set out the business case for the WCML Strategy. The business case demonstrated that the costs and benefits of the enhancements to the infrastructure necessary to deliver the full strategy outputs offered excellent value-for-money, with a benefit cost ratio of 2.4:1.

There is now greater certainty compared to the June 2003 Strategy over how the strategy will be delivered and the associated future cost and benefit streams:

- The cost of the infrastructure works has been reduced from £9.9 billion to £7.6 billion;
- The revised approach will deliver not only lower capital costs (through efficient construction methods and reduced compensation costs) but also provide more efficiency in ongoing maintenance requirements and improved performance;
- The deployment of new rolling stock has been further optimised to match existing and future demand;
- More effective maintenance regimes will ensure that, in particular, the weekend travel market is better served by providing a more competitive and reliable service; and
- Capability for freight has been maintained and options for further enhancement to freight capability have been identified.

**Benefits**
The benefits described in the June 2003 SRA Strategy remain – faster journey times, increased frequencies and sustained levels of improved reliability and punctuality. Weekend services will be improved as a result of implementing an optimised maintenance strategy that makes best use of the renewed and enhanced infrastructure.

Improved engineering maintainability and operational sustainability remain key objectives for the Strategy. For example, after the four tracking or bidirectional signalling of the central section between Rugby and Preston it will be possible both to reduce maintenance costs and to increase passenger revenue through allowing 54 hour possessions whilst preserving an attractive, reliable weekend service.

Considerable further work has been undertaken to ensure that the performance benefits of improved reliability and the associated reduction in delays to passengers can be secured through
the specific scheme renewals and upgrade. Punctuality and journey time benefits for freight traffic will result from improvements in the infrastructure’s capacity, line speed and reliability.

4.6 Maintenance and renewal regimes

The June 2003 Strategy explained that one of the SRA’s five key objectives for the West Coast Route is: ‘To establish a sustainable railway and cost effective maintenance and renewals regimes.’

This will be achieved as a result of ‘building in’ features that will increase the durability of the infrastructure, and network design that will ensure a more effective and cost-efficient execution of maintenance and renewals.

The installation of the heavier section rail, UIC60, will provide a stiffer track section, more resilient to increased loading which will help to increase the period between maintenance and renewal cycles.

Bi-directional signalling will be selectively introduced where it can provide both improved operational flexibility and better possession facilities for maintenance and renewals for example on the sections between Crewe and Preston which do not have in built flexibility.

Major remodelling schemes such as those at Stafford and Rugby will benefit from layout design which have, at the outset, fully considered the need for engineering accessibility to secure the ability to undertake routine maintenance more efficiently and with safer segregation from traffic.

Where new and additional tracks are being installed the opportunity to provide wider intervals between the tracks is being taken which will maintain operational flexibility while permitting improved access for maintenance and renewal. This had not been provided when other sections of the route were widened many years ago: this has left a difficult legacy whereby access to one track for renewal affects adjacent lines to both sides, reducing cost and operational efficiency.

Reviews are currently underway to reconsider the established balance between week day night and weekend maintenance/renewal activity in an effort to optimise the trade off between passenger and freight business needs and engineering costs.

For example south of Crewe on the largely four track railway there may be benefit in moving certain types of routine renewals work into midweek nights and thus increase the journey opportunities at the weekends. North of Crewe, on the largely two track railway where there is intensive freight movement on weekday-nights there may be benefit in shifting the maintenance and renewals activity into longer weekend possessions. Clearly the greater use of diversionary routes and their capability to handle increased flows will also be an important consideration.

One of the requirements of the operation of 125 mile/h tilting trains is the need to maintain a much more fixed track alignment, for ride quality and track life reasons, as well as the need to sustain specific clearances. Network Rail is currently developing these new maintenance processes. The completion of the upgraded sections of route will largely bring effective separation of freight tracks from the high speed passenger tracks between London and Preston, reducing this maintenance burden by removing freight tonnage from the fast lines.
4.7 Power supply

The future required train service outputs for both the new Pendolino passenger trains and the faster, more frequent freight paths will necessitate increased power supplies to the electrified overhead line system.

A new Autotransformer distribution system, which will ensure sufficient power capacity is available, has been specified by the SRA and this is at an advanced stage of planning and development for the whole of the route. Implementation is already underway on the southern part of the route with the first new supply point coming on line in early 2005 and completion of the whole system by mid/late 2006.

To accommodate the higher speed of Pendolinos of 125 mile/h with tilt, it has been necessary to upgrade the overhead line infrastructure, with the southern route sections already operational and the remaining sections to the north planned for completion during 2005.

4.8 Freight

The June 2003 Strategy outlined three infrastructure supply side (network capacity) factors that potentially constrain any underlying market demand growth for rail freight on the West Coast route network:

- Adequate capacity for existing flows and for growth in the daytime period;
- Route maintenance requirements and associated night time line capacity; and
- Adequate capacity for freight growth north of Crewe.

The SRA has continued the objective explained in the June 2003 Strategy to provide capacity for up to 60–70% more trunk freight paths on the West Coast route with provision for longer (775 metre) trains and increased gauge clearance.

The quantum of paths provided by 2008 (Appendix C of the Strategy) was agreed as a result of a consultative process with the Freight Operating Companies (FOCs). Since then the SRA, through discussions with the FOCs, has confirmed that the volume figures in the Strategy are consistent with expected rail freight demand in 2008.

The majority of the planned gauge enhancement works on the West Coast Main Line and on the important link through East London and Ipswich to Felixstowe will be completed by September 2004, enabling 9’ 6” containers (increasingly the new maritime standard) to be carried on conventional wagons.

4.9 Next steps

The Project Team is focused on delivery of the September 2004 timetable outputs. Network Rail and the SRA will continue to work together to ensure completion of the project to support 125 mile/h tilt operation to Manchester, the North West, and Scotland. Every effort will be made to manage and mitigate the risks associated with this process.

In addressing the ORR’s Interim Review conclusions, the SRA and Network Rail have reviewed the manner in which Project scope meets the route’s Strategic requirements. The Network Rail Business Plan submission (March 2004) and this document are consistent.
All parties are committed to securing further cost efficiencies and will take every opportunity to implement emerging value-for-money solutions. Where appropriate this will include implementation of a new contracting strategy, application of alternative access arrangements, impact assessment of industry standards, on-going maintenance requirements, optimisation of major site specific schemes (e.g. Rugby, Trent Valley, Stafford), review of diversionary routes and the precise implementation of line speed enhancements.

Amended track access agreements will be negotiated between Network Rail and various operators. They will be submitted to the Rail Regulator for consideration in accordance with his functions and duties under the Railways Act 1993. The Virgin Rail Group/Railtrack PUG-2 agreement will be addressed as part of this process, with the outputs changed to match the new service specifications.

The SRA will establish the parameters for new and revised franchises for operators using the West Coast route in a co-ordinated way to ensure that the benefits of the project are maximised in terms of value for money.
Appendix A: Infrastructure progress & specifications

A1. Introduction

At the time of publication of the June 2003 Strategy, the priority task was to develop in detail all the aspects of the work and outputs for the September 2004 timetable. This has been done and now energies have turned towards the later stages of the Project.

Network Rail has been able to understand more fully the detailed asset condition and the requirements of the track, signalling and overhead line for the enhanced outputs, both for the routes to the North of Crewe and for the site specific schemes. The SRA has worked with Network Rail to optimise further the match between the inputs and the required outputs, giving an improved business case for the enhanced outputs in the later stages of the Project.

The Strategic Direction of these schemes remains exactly as explained in the Strategy, namely to use the opportunity of renewals necessary to enhance the route’s capability, performance and capacity. These changes to the network provide the ability to sustain the network during longer, more efficient, possessions, while retaining important outputs for the customer.

This section describes the route from south to north. Detailed reference to schemes is made only where there is updated information to that contained within the Strategy.

A2. Engineering schemes

A2.1 Ledburn Junction

This junction, near Leighton Buzzard has been fully renewed to a Railtrack design, with very many new components whose design objective was to achieve high standards of reliability. As with many other early Project decisions to introduce innovation, the results have been disappointing. Only recently, following many modifications, has reliability started to improve.

A2.2 Bletchley

Network Rail has reassessed the condition of the signalling at Bletchley and the planned 2005/06 resignalling scheme can be deferred for a number of years, if some refurbishment work is carried out. The exact timing of the full resignalling has yet to be determined.

In the light of this updated information, the SRA has reviewed the business case for the improved functionality. The additional turnback siding at Wolverton and the higher speed junction at Bletchley South cannot be justified as separate schemes. Similarly, the extension of the slow line platforms to 12-car length will have to await the resignalling. Work will, however, still take place at Bletchley in summer 2004 to secure the high speed on the fast lines by network simplification.

The retention of the Bletchley signalling centre will delay the implementation benefits of more unified signalling control on the route. Network Rail and Train Operators are working on enhanced route wide control arrangements for September 2004 to minimise the disadvantages of retaining multiple local control points.
**A2.3 Northampton**
This station assumes greater importance in the September 2004 timetable, with an increased number of services terminating there. Additional stabling for passenger trains and recessing facilities for freight will be provided.

It is the intention to provide a new, purpose built, train maintenance depot at Northampton to maintain the current Silverlink County rolling stock and the new Inter Regional Express electric multiple units for Silverlink and Central Trains. These are planned to be introduced on the route in 2005. This depot would replace the existing older facilities at Bletchley and enable future network simplification to take place at Bletchley, thus reducing renewal costs.

**A2.4 Rugby**
The work on the timetable has reinforced the need to improve the throughput and capability of the network through Rugby. The design for the scheme at Rugby as envisaged in the June 2003 Strategy has been refined further. It is likely that there will ultimately be a need to operate some passenger trains between the Northampton line and the Trent Valley route. It will still be possible to segregate the most important flows through Rugby.

A modification to the design is being assessed, with the retention of the recently refurbished existing station’s island platform including the canopies, serving the northbound slow line and the southbound fast line. Two new through island platforms are also required, linked by a new footbridge with lifts and new and substantially improved customer facilities, including a new entrance and Travel Centre. Line speeds will still be increased to 125 mile/h to and from Nuneaton and the North West and very fast connections provided to and from the key Birmingham line.

The June 2003 proposal for Rugby would have delivered substantially enhanced outputs at a lower cost than the previous Railtrack renewal scheme. The latest refinement reduces the cost still further. The initial enabling works, including the disruptive changes to the electrification arrangements and junction installations required for the stageworks, will still be included within the August 2004 blockade. Thus the main disruption will be completed before the September 2004 timetable.
The scheme phasing will be the same as previously envisaged, with construction work separate from the through tracks, capitalising on the flexibility gained from the new junctions at the four approaches. These junctions, coupled with the new layout design when complete, will also deliver the very significant benefit of permitting major engineering possessions at each of the key parts of the Rugby area network to be taken without the effect which bedevils the existing facility which is a need to totally block the route to accomplish such work. Disruption will still be confined primarily to changeover possessions around Bank and public holidays, thus enabling the important September 2004 timetable outputs to be sustained.

The specification now requires the revised network and station at Rugby to be completed in summer 2008, ready for the December 2008 timetable. It is possible that some improved outputs on the northbound side of the layout could be delivered at an earlier date.

A2.5 Coventry
A further review by Network Rail of the condition of the signalling at Coventry has established the requirement to resignal the area in short timescales. Work has therefore recommenced on the design of the signalling and an optimised track layout for the area, involving some improvements. The prime objective is to achieve a modern track layout with good throughput and with platform approach and departure speeds given priority over the line speed for the relatively few non stopping trains. As part of this work, an examination is under way into the possibility of the provision of a separate ‘bay’ platform for trains from Nuneaton to minimise conflicts with the Birmingham to Rugby to London main line.

A2.6 Nuneaton
The Strategy explained how the first phase of the work at Nuneaton has been accelerated by the SRA’s revised scheme, thus separating the Leicester to Birmingham line from the Trent Valley section of the West Coast Main Line. This work has been progressing on time and under budget.

The proposal was to continue the scheme at full speed, while the existing resources were fully mobilised and to install much of the new trackwork efficiently in August 2004, in a blockade ahead of the delivery of the September 2004 timetable. However, the scheme was at the point of authority when there was a short hiatus caused by the funding deferral as part of the ORR review of West Coast funding. Network Rail is now striving to get the scheme back onto its original schedule of delivery in 2005, or as soon as possible thereafter, with the key disruptive track works at Nuneaton North in the August 2004 blockade.
Figure 2
A2.7 Trent Valley

This scheme provides for the four tracking of almost all of the double track sections between Rugby and the Stoke line junction at Colwich. Work on the September 2004 timetable has demonstrated how constrained this section of route is. Capacity exists only for existing freight traffics alongside the improved frequency and speed of West Coast Trains’ 125 mile/h tilting trains. This has required a number of hard choices, including limiting freight during peak periods, reductions in the evening passenger services to accommodate freight, a sub optimal off-peak passenger service at Tamworth and Lichfield and weekend diversions to complete renewals on the line.

Since the Strategy was published in June 2003, the Transport and Works Act powers have been received for the four tracking and contracts have been let for the early enabling works. Network Rail has developed the scheme to a far greater extent, bringing a greater knowledge of the underlying renewals on the section and has been able to realise the procurement advantages of largely segregated work on the widening earthworks.

The business case appraisal for the Trent Valley scheme as part of the West Coast Strategy has been reinforced by this work: the costs of the enhancement component is reduced by some 40% and the passenger, freight and network sustainability secured by the scheme are stronger still than envisaged.

It is planned to proceed with the scheme using the efficient Network Rail delivery programme, with the main works completed in summer 2008, ready for the December 2008 timetable.

Figure 3

Junctions moved to straight sections of route for higher speed and easier maintenance.
Bi-directional centre tracks and wide track spacing facilitate easier maintenance and renewal.
A2.8 **Colwich Junction (south of Stafford)**

At the time of the June 2003 Strategy, work was under way on the design and appraisal of a number of options for the Colwich area, underpinned by the renewal requirements and with the objectives of improving capacity and speed. Some of these options were quite valuable, with an acceptably good benefit to cost ratio.

However, a more detailed condition assessment has meant that Network Rail has had to commission work to refurbish the signalling at Colwich on a very urgent basis, due to wiring condition and this will enable the existing signalling to continue for the medium term.

The network disadvantages of the retention of the flat junction at Colwich are mitigated by the schemes in the Trent Valley and at Stafford: the junction arrangements can be optimised if there is full timetable flexibility between Rugby and Norton Bridge, to the north of Stafford.

A2.9 **Stoke area**

The June 2003 Strategy and section six of this progress update explains the role of the SRA in bringing together the ‘all industry’ business case and specifying the outputs required, whether sponsoring enhancements, or simplification, or abandonments, when renewals fall due.

The Stoke line exemplifies the need for this role, where the resignalling scheme, which Railtrack undertook in 2001, simply replicated the previous ‘steam age’ layout, without reference to the required outputs of the route. Regrettably, some track and signalling renewals were undertaken which have never since been used for traffic. A layout was reinstalled which neither matched the residual freight traffic needs nor provided other than an unambitious line speed profile on this main Manchester to London and Birmingham route.

Recent work with train and freight operators and Network Rail has identified a package of cost effective route improvements and abandonments which will reduce the cost of ongoing asset ownership, improve network flexibility and provide essential speed improvements, with journey time reductions of up to 2.5 minutes in the area and line speed profiles which match the performance of modern day Voyager and Pendolino trains.

The challenge for Network Rail is to deliver the more disruptive elements of this work as far as possible within the planned possessions for Stockport works, without in any way jeopardising the focus on the September 2004 required route outputs.

The network simplification and the need to secure the Stoke line as a high speed passenger route to Manchester have necessitated the repositioning of tracks in the Etruria station area to achieve a fast alignment. The station there would have required to be fully rebuilt, serving different tracks. An analysis of the current traffic pattern and the potential for future traffic has demonstrated that there is no business case for the retention of the station and so the closure of Etruria station has been formally proposed.

A2.10 **Stafford**

Stafford exemplifies the value of the separate development and appraisal of an output specification when renewals fall due. The original Railtrack scheme for renewals at Stafford had similar shortcomings to the 2001 Stoke scheme: it retained many very slow speed connections on a potential high speed alignment, it did not strip renewals down to the basic minimum, nor did it achieve any improved outputs. In the earlier phases of the
SRA review of the WCRM Project, Railtrack believed that the scheme was on track for December 2003 delivery.

Subsequently, the anticipated costs of the scheme rose and the delivery programme slipped to such an extent that the scheme was cancelled so that it could be reassessed.

The key capacity and flexibility required at Stafford is to separate the frequent passenger services from the Wolverhampton direction to the Manchester, Liverpool and Preston directions from the freight flows from the Trent Valley to the Crewe direction. This can be done by conventional ‘non railway’ civil engineering works to achieve grade separation by means of a ‘dive under’. This approach makes savings, especially in extensive and expensive re-signalling works. Furthermore, renewals in exactly
the same position as today inevitably lead to a combination of inefficient engineering and high traffic disruption.

A new design for Stafford has therefore been developed which builds in grade separation and improves the through line speed to and from Wolverhampton to 125 mile/h. The staging plan will enable through routes to be maintained at good capacity during the work and thus will not inhibit the vital benefits to be realised when the Rugby and Trent Valley schemes are completed in December 2008. Transport and Works powers will probably be required for this simplification scheme as there are changes to land boundaries, particularly around the construction phase, where tracks have to be slued around the work sites to enable work to take place efficiently away from passing traffic.

Conceptually, this scheme for Stafford is similar to that recently completed in a timely and cost effective manner at Shortlands for the temporary additional services after the opening of the Channel Tunnel Rail Link’s first stage and before the opening of the Link’s second stage.

The new scheme must be capable of completion before the required track and signalling renewal dates. Scheme development and design is proceeding well and the planning issues are being considered. It is unlikely that the available funding or scheme practicalities would enable completion for December 2008, which would have been desirable in order to realise further gains from the Rugby and the Trent Valley schemes in the one timetable. It is currently anticipated that the scheme would be completed for the December 2009 timetable, but this will depend heavily on timescales for planning and other consents.

A2.11 Stockport and Manchester area

The June 2003 Strategy explained how the renewal of the signalling in the Stockport area was planned to be undertaken using a computer based interlocking and how it was unlikely to be able to commission the full layout after the Summer 2004 blockade of the area.

Network Rail has now decided not to proceed with the technical innovation in the area as this presented too great a cost and delivery risk. The existing foundations, track and signalling will now be fully refurbished, including track renewals and some more modern technology within the existing mechanical signalling to improve train control. When the blockade in summer 2004 is completed, the full network will be restored to its existing configuration, without the transposition of track that had been proposed.

The original scheme had included an extra through platform and this is being incorporated into the current scheme, with commissioning due in 2005.

Considering capacity, train operators believe that the retention of the existing configuration is better than the original proposal, but there are some capacity issues at the Buxton/Sheffield line junction to the south of the station. These apply particularly to the northbound line and an examination is currently taking place to consider whether there is a simple cost effective solution which would give effective grade separation here at a fraction of the cost of the very complex transposition scheme.

Manchester Airport has, through the timetable work, been shown to be a key capacity constraint to the timetable in the whole of the Manchester area. The September 2004 timetable has had to compromise some local flows in the off peak, but the opportunity has been taken to improve many of the medium and long-distance links to Manchester Airport. This timetable has been very difficult to complete as the network in the area is heavily used.
The platform capacity restriction at Manchester Airport is likely to prevent further timetable improvements being made to the long-distance West Coast Main Line services in the area. A review has started to understand whether there is a simple, cost effective means of expanding the platform capacity at the Airport station. West Coast Main Line services could then be improved, with the 2 hourly CrossCountry services to Scotland being extended to and from the Airport.

A2.12 North Wales
Work is now complete on the detailed assessment of the requirements for the route clearance for diesel hauled Pendolino trains between Crewe and Holyhead. The necessary engineering works are now planned and programmed to take place in June/July 2004, ready for the September 2004 timetable. These trains will be deployed on the key business and leisure trains and at weekends, where higher capacity than that provided by a 5-car class 221 Voyager is essential.

The study of the potential for cost effective line speed improvements between Crewe and Holyhead is continuing. Initial indications are that there are some opportunities to improve journey times at a cost level for which there may be a good business case.

A2.13 Crewe to Warrington and Liverpool
The June 2003 Strategy explained the principles of the proposals for the resignalling and upgrading of these routes.

The Crewe to Warrington and Ditton to Wavertree speed changes are confirmed as immediate for the June 2005 timetable, with a further minor speed improvement in the Liverpool area added.

Examination of the business case for the line speed changes between Weaver Junction and Ditton has demonstrated that this would be more efficient if deferred until the signalling is renewed in the area in 2006/07. This delay, when coupled with the additional benefit identified above, extends journey times by less than one minute for around one year, and eliminates duplicate work.

The question of the value of the direct chord from Frodsham to Halton Junction, which is currently only used by a handful of passenger trains in one direction per year, was raised in the June 2003 Strategy. The issue has been discussed with many consultees in the area and no likelihood of viable use in the short or medium term has been identified. There would be a cost of renewing the route if it were to be retained when the Weaver Junction to Ditton section is resignalled. These costs are being confirmed and a decision will be then be taken whether the chord should be retained.

The route from Crewe (exclusive) to Weaver Junction and additional bi-directional working to Acton Grange (south of Warrington) is planned for 2006/07, linked to the key signalling renewal dates. This scheme will deliver improved freight and passenger capacity and ease the difficulties of perturbation and engineering management on the very heavily used route section.

A2.14 Wigan and Preston area schemes
The June 2003 Strategy explained the three proposed schemes in the area in order to improve capacity, performance and the sustainability of the network. Progress has been made, jointly with Network Rail, on the detailed development of the schemes and consideration of achievable and optimised implementation dates.

The junction at Euxton, south of Preston is the key junction for Manchester and was
singed some years ago. The timetable work has confirmed the critical nature of this junction and an additional track for southbound trains will be provided so that trains from the fast lines can proceed towards Manchester without conflict.

The Strategy specified the provision of bi-directional signalling on the double line section between Balshaw Lane, to the south of Euxton, and Wigan so that perturbation and maintenance could be handled more effectively. More detailed appraisal demonstrated that this scheme did not deliver benefits in normal day-to-day working and would be quite disruptive to achieve. An alternative and more deliverable solution has therefore been devised. The trackbed along most of the double track section was originally of four track width and advantage will be taken of this to lay an additional bi-directional single line, widely spaced from the main two tracks so that both maintenance and renewal can be undertaken on these tracks without traffic requiring to be halted. Furthermore, the construction work will be able to be carried out without affecting the traffic through this bottleneck. The track layout will thus be simplified by comparison with today and a very useful additional slow line created, as well as improving further the sustainability of the network.

One signal interlocking covers the Euxton and the Balshaw Lane areas and Network Rail has identified that it will be much more cost efficient to undertake the two schemes above as one scheme so that common procurement and design can then be undertaken. The first phase, at Euxton, is planned to be commissioned for the upgraded timetable in December 2005, subject to planning issues being resolved, with the Balshaw Lane to Wigan scheme following in 2006.

The Strategy committed to an improved access to Wigan station to and from the Liverpool line so that these trains could be segregated from the increasing number of main line passenger and freight services. This scheme is targeted for completion ahead of the December 2005 timetable upgrade.

A2.15 Preston to Glasgow line speed enhancements
Network Rail had been working to a line speed profile which had been based on the original PUG2 Track Access Contract. However, the detailed work scope to achieve this line speed profile has only recently been assessed, given the urgent priority of work on the route from London to Crewe and Manchester for September 2004.

Joint work by Network Rail and the SRA has highlighted that train acceleration and braking constraints would not, in practice, permit the full benefits of the line speed profile to be realised.

Work is now complete on a re-optimisation of the line speed profile, taking into account renewal timings, with the engineering analysis demonstrating that the last 20% of the acceleration between Preston and Glasgow was only achieved by disproportionally high renewals scope and/or signalling works. However, it has also been confirmed that many miles of the route can have the speed limits raised to 120 or 125 mile/h relatively easily (ie without major renewals).

The detailed analysis revealed that, on the highly curved ‘mountain’ sections between Oxenholme and Penrith and further north through the upper Clyde valley, the proposed speed profile for tilting trains was not a good match with the train characteristics or train driving requirements. The work also demonstrated that the use of tilt is most valuable in improving the line speed at the relatively few points where speed is significantly restricted by curvature. The revised work scope will now deliver a constant speed of around 110 mile/h
over these more highly curved sections. This compares with a current situation of intermittent speed limits of 110 mile/h punctuated by restrictions to 80 to 90 mile/h and with the original proposal of 125 mile/h but with frequent restrictions to 110 mile/h.

The difference in overall journey times is only a matter of seconds and these further gains can be deferred until the natural renewals dates for track in the area or when the signalling is renewed, whichever is the limiting factor on speed. When track renewals are undertaken over the period from 2005, they will be done to the alignment for the higher speed.

The detailed work has also demonstrated that there are some other points where speed restrictions can be raised in order to cut journey times. Some of the infrastructure on the route is not suited to the requirements for the future and, instead of being renewed these will be removed or simplified, thus achieving a reduction in costs and improvements in journey time.

The overall effect of this joint work has been to enable the delivery of the June 2003 Strategy in a much more cost effective manner and with the prospect of incremental improvements in forthcoming years as renewals work is undertaken.

Considering the implementation of the high volume of basic renewals and the further renewals which are required for the line speed enhancements, Network Rail is reviewing the programme and the programme efficiency in order to achieve the outputs to the December 2005 timescale consistent with the Strategy. The work scope and the proven cost efficiencies generated by the blockades to the south of Crewe and Manchester is pointing the way to a similar approach for the section of route between Carnforth and Carstairs, where the Edinburgh line diverges. The SRA has undertaken consultation with many stakeholders along the route and the approach has been welcomed. Consultees generally preferred a short period or periods of significant disruption and early delivery of the outputs versus a long period of disruption and delayed outputs.

A2.16 Banbury to Leamington Spa

The resignalling of this important CrossCountry route through the Cherwell Valley was supported in the June 2003 West Coast Strategy as the additional capacity will assist with the delivery of the half hourly Chiltern Trains service from London Marylebone to Birmingham, improve the deliverability of the CrossCountry services south of Birmingham and improve the capacity for freight. Both these features will benefit the users of the West Coast Route during the engineering works. This scheme is underway, with completion scheduled for early May 2004, ahead of the major West Coast blockades in late May and August.
West Coast route: speed and capacity improvements
North of Crewe to Scotland and North Wales.

**Speed Improvements to give a Ruling Line Speed of:**
- Up to 110 mile/h
- Up to 115 – 125 mile/h

- Locations with capacity or capability improvements
- Line of route capacity or capability improvements

**Figure 5**
A.3 Targeted completion dates

The improved detail of the infrastructure asset knowledge, the more detailed development of the renewals and upgrade schemes, including an assessment of their efficient and realistic programme requirements, and the match with available funding now indicates the following to be the most likely dates for the realisation of these elements of the Project.

<table>
<thead>
<tr>
<th>Description</th>
<th>Outputs targeted to be available for the timetables from</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watford to Northampton slow line speed improvements (100 mile/h)</td>
<td>December 2005</td>
</tr>
<tr>
<td>Rugby to Birmingham</td>
<td>December 2005</td>
</tr>
<tr>
<td>Rugby</td>
<td>December 2008</td>
</tr>
<tr>
<td>Trent Valley Four Tracking</td>
<td>December 2008</td>
</tr>
<tr>
<td>Nuneaton Phase II</td>
<td>Early 2006</td>
</tr>
<tr>
<td>Crewe to Acton Grange</td>
<td>December 2007</td>
</tr>
<tr>
<td>Weaver to Ditton including speed improvements</td>
<td>December 2006</td>
</tr>
<tr>
<td>Wigan Station – Extra Track</td>
<td>December 2005</td>
</tr>
<tr>
<td>Standish to Balshaw Lane 3rd Track</td>
<td>June 2006</td>
</tr>
<tr>
<td>Euxton Junction Doubling</td>
<td>December 2005</td>
</tr>
<tr>
<td>Preston to Crewe and Ditton to Liverpool speed improvements</td>
<td>June 2005</td>
</tr>
<tr>
<td>Weaver – Glasgow speed improvements (with later minor improvements)</td>
<td>December 2005</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
</tr>
<tr>
<td></td>
<td>Time (hr min)</td>
</tr>
<tr>
<td>Birmingham New Street (fastest)</td>
<td>1h 39m 1</td>
</tr>
<tr>
<td>Birmingham New Street</td>
<td>1h 43m 3</td>
</tr>
<tr>
<td>Coventry</td>
<td>1h 11m 1</td>
</tr>
<tr>
<td>Manchester peak (fastest)</td>
<td>n/a n/a</td>
</tr>
<tr>
<td>Manchester fast via Stoke</td>
<td>n/a n/a</td>
</tr>
<tr>
<td>Manchester via Stoke</td>
<td>2h 41m 4</td>
</tr>
<tr>
<td>Stoke</td>
<td>1h 51m 1</td>
</tr>
<tr>
<td>Liverpool peak (fastest)</td>
<td>n/a n/a</td>
</tr>
<tr>
<td>Liverpool</td>
<td>2h 53m 5</td>
</tr>
<tr>
<td>Crewe</td>
<td>2h 08m 3</td>
</tr>
<tr>
<td>Preston (fast)</td>
<td>2h 25m 0</td>
</tr>
<tr>
<td>Preston</td>
<td>3h 01m 5</td>
</tr>
<tr>
<td>Carlisle (fast)</td>
<td>3h 41m 2</td>
</tr>
<tr>
<td>Carlisle</td>
<td>4h 04m 8</td>
</tr>
<tr>
<td>Glasgow (fast)</td>
<td>5h 06m 3</td>
</tr>
<tr>
<td>Glasgow/Edinburgh</td>
<td>5h 35m 10</td>
</tr>
<tr>
<td>Holyhead</td>
<td>4h 28m 9</td>
</tr>
</tbody>
</table>

Appendix B: Expected West Coast 2004 and Indicative 2005 and 2008 Journey Times
Notes for Appendix B:

1 These figures are the indicative journey times published in paragraph 3.2.5 of the June 2003 SRA Strategy.
2 These figures are from the timetable produced for Winter 2004.
3 These figures are from timetable and planning assumptions, and are subject to validation.
4 Some longer journey times may apply as 110 mile/h rolling stock will operate some trains between the West Midlands and London between September and December 2004. This also causes some changes to Manchester line services of up to 3 minutes.
5 The restructured timetable plan would normally alternate these services and timings.


Further information and comments
This document does not constitute part of a formal consultation exercise. There has been extensive consultation at all stages of the development of the strategy. However, if further information is required or you wish to make any comment on particular parts of this document, please contact us on WCRMresponses@sra.gov.uk or write to:

Tony Francis
West Coast Route Modernisation Team
Strategic Rail Authority
55 Victoria Street
London
SW1H 0EU.