

Expenditure, activity and outputs

Total expenditure

The projected total cost of operating, maintaining, renewing and enhancing the network (Figure 1) is broadly consistent with our 2005 Business Plan and with the projections underpinning the 2003 Access Charges Review (ACR03). The criteria applied in identifying the investment activities necessary to meet our asset management responsibilities are as set out in our Business Planning Criteria. This was published as a consultation document in April 2005.

Maintenance

Our projected maintenance expenditure for 2006/07 is eight per cent less than the 2005/06 budget. This planned saving is the result of the identification of efficiencies, which have been identified, in part, through a detailed and rigorous analysis of maintenance activities in each area. This has also allowed a rebalancing of the maintenance budgets to better match the needs of each area.

The 2006/07 plan represents a step forward in quality and consistency of processes and assumptions, and the level of detail at which planning is taking place. This reflects the improved information and understanding we have been developing since the infrastructure maintenance contracts were brought in house.

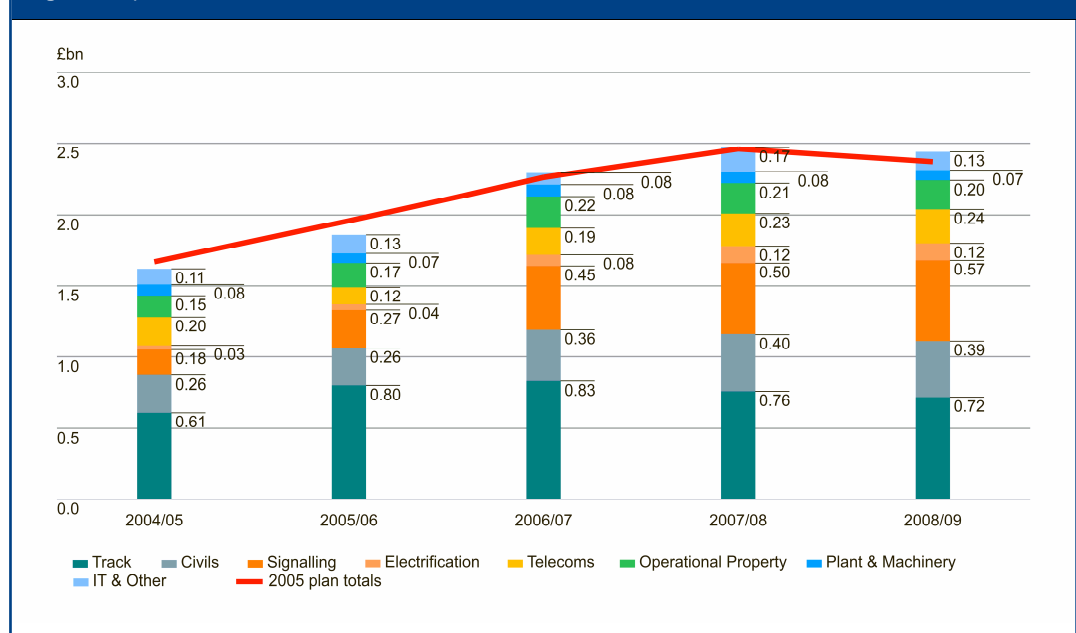
The plans also reflect the benefits of new supply contracts negotiated over the last year. These included contracts for the network-wide logistics and supply of railway spares, the provision of small plant and tools, contingent labour and welders, and road-rail vehicles and road fleet. Contracts for the supply of on-track plant have been

renegotiated, resulting in the removal from the network of the worst performing tampers, with the expectation of improving overall fleet reliability and productivity.

During the year, responsibility for some maintenance activities delivered by other parts of the organisation has been consolidated into our Maintenance function, for example level crossing inspections, management of the vehicle fleet, maintenance of operational property, and operational telecoms. This has removed some levels of management and clarified lines of responsibility. The consolidation has permitted us to leverage our management effort and gain economies of scope and scale. Overall, we anticipate a better quality of maintenance output to be delivered for this reduced financial outlay. For example, the provision of a dedicated force of level crossing inspectors will ensure a greater focus on the inspection and maintenance of level crossings, without the distraction of being involved in the delivery of other maintenance activities. While a flexible workforce and adaptable processes are essential to an efficient organisation, in certain circumstances the structure afforded by defined boundaries can generate a more effective use of resources.

Our direct employees cost plan is built bottom-up by individual, grade and location. The plan for core maintenance direct employees is higher than this year's budget, reflecting the continuing internalisation of maintenance activity and drive to reduce reliance on contingent labour. This is reflected in the headcount, which increases from a 2005/06 budget level of around 17,000 to a planned level for 2006/07 of close to 18,000. We continue to use standard unit rates to plan and control some of our key employee related costs

Figure 1 Expenditure forecasts 2004/05 – 2008/09



such as personal protective equipment and travel and employee expenses.

The planned expenditure for plant and vehicles shows little change from last year. However, an increased level of activity masks a downward trend in costs resulting from unit rate savings gained from the new contracts for small tools, plant and vehicles. Materials' costs also show little change, again increased levels of activity mask a downward trend in rates, gained from new contracts with our external suppliers. Maintenance will continue to work cross-functionally to leverage these savings into other parts of the business.

In addition to the savings described, there is a host of other productivity and efficiency gains from both national and local initiatives. These range in size and complexity from, for example, maintaining the correct tyre pressures on company vehicles to re-planning freight haulage to improve efficiency.

Renewals (excluding West Coast Route Modernisation)

Our planned renewals expenditure, excluding the West Coast Route Modernisation (WCRM), is illustrated in Figure 2, together with a comparison to the total renewals expenditure included in the 2005 Business Plan. We have updated our renewals expenditure plans for the next three years taking into account the level of activity in 2005/06 and further development of individual projects over the last year. In 2006/07, we will significantly increase the level of signalling and civils renewals. Much of the increase comes from a number of major projects which have been in development and are now moving into the implementation phase. We will continue to focus on achieving the correct specification for renewals projects and our ability to deliver them efficiently. As a result, we

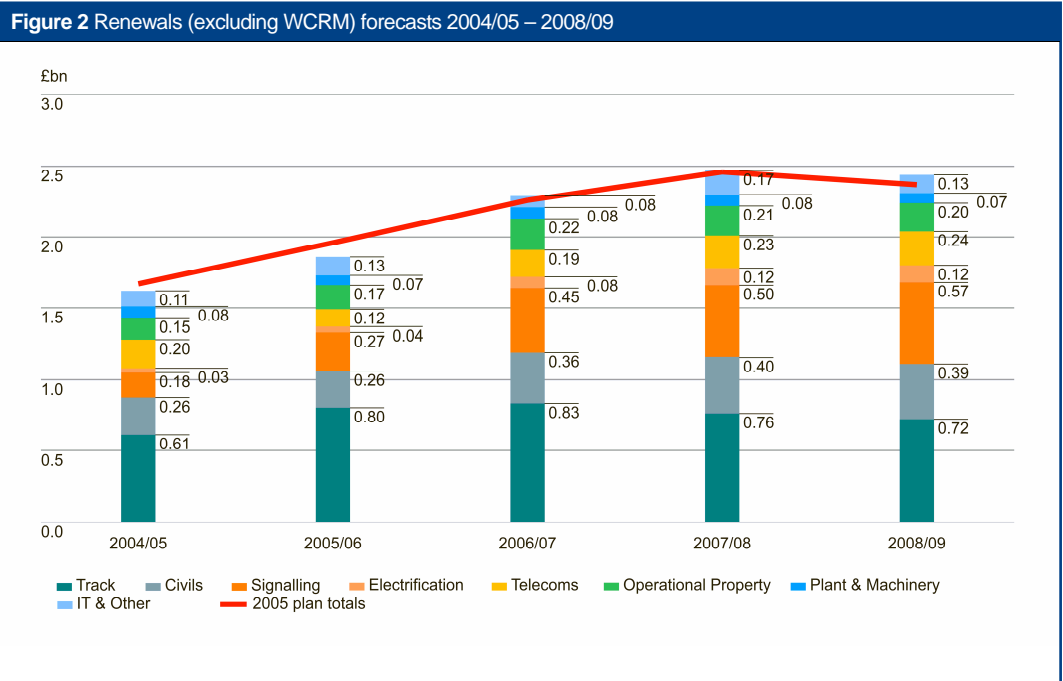
recognise that there is a risk that we may not achieve fully the planned underlying increase in renewals and we have therefore adjusted our overall projection for 2006/07 down by £100 million. However, our plan assumes that we will substantially recover this in the final two years of the control period.

It should be noted that in order to manage the deliverability of our civils, signalling and electrification plans, we have included an element of overplanning in our workbanks. As a consequence, the sum of our Route Plans exceeds our plan for the network as a whole. It is likely that a small proportion of the activities in these areas will slip to subsequent years.

Our planned renewals expenditure over the whole of Control Period 3 is expected to be around £60 million higher than ACR03. We are currently forecasting around £175 million of additional expenditure on track renewals, which reflects around £100 million additional expenditure in 2005/06 (mainly the result of an increase in rail renewal) and a further allowance of around £20 million per year for the expected impact of traffic increases.

This additional expenditure on track is partially offset by a reduction in the Control Period 3 forecasts for IT expenditure. In addition, our Control Period 3 projections for the Global System for Mobile Communication for Railways and Fixed Telecom Network (GSM-R/FTN) programme have been reduced by around £30 million, although the overall anticipated final cost of the programme remains unchanged.

Our signalling expenditure projections over the remainder of this control period are consistent with



ORR's recent conclusions on medium-term funding. This resulted in increased funding of around £180 million (in 2005/06 prices) in Control Period 3.

For most asset categories, the plan assumes that we will achieve efficiency savings that are broadly consistent with ACR03. While we have developed a range of initiatives to deliver further efficiency savings, we still face significant challenges to identify how to achieve all of these savings, particularly for track and operational property.

Track

The planned track renewal expenditure and volumes, excluding work being carried out under WCRM, is shown in Figures 3 and 4.

Figure 3 Track expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
Plain line	593	516	490
S&C	206	221	206
Other	28	24	23
Total	827	762	719

Figure 4 Track activity volumes

	2006/07	2007/08	2008/09
Plain line (km)			
Rail	958	908	907
Sleepers	730	692	692
Ballast	926	878	877
Total (km)	2,614	2,478	2,476
Switches & crossings (no.)			
Complete renewal	383	433	433
Partial renewal/reballasting	64	73	73
Abandonment	57	65	65
S&C (equivalent units)	434	491	491
Fencing (km)			
	297	281	281
Drainage (km)			
	59	56	56

Note: Switch and crossing renewal volumes are counted in renewal equivalent units so complete renewals count as 1.0 equivalent unit, reballasting and partial renewals as 0.33 and abandonment as 0.5.

Methodology

The plan is based on detailed workbanks which are built 'bottom-up' from specific sites identified by our local maintenance engineers. Track renewals are proposed when either defined limits are approached (such as on rail depth) or where component condition has reached the state where maintenance is uneconomical, or cannot deliver the required performance. These items of work are reviewed and prioritised by the territory engineering team who refine the scope of work and group items of work around specific locations to reduce the number of possessions required and increase efficiency.

Items of work are also reviewed for synergies and conflicts with other schemes, particularly resignalling schemes. Validated proposals for the renewal of switches and crossings (S&C) layouts are presented for review by the Route Strategy Planning Groups to identify if there are any opportunities for enhancement or rationalisation.

A set of reviews drives a consistent decision making process across the territories. Firstly, a minimum of 15 per cent of proposals are checked by the territory track engineer, followed by peer review, led by the head of track engineering, to ensure consistency of decision-making and specification, appropriate prioritisation, and compliance with the asset policy across the territories. This peer review consists of a combination of desk-top and on-site activities supported by a programme of train based inspections.

The track delivery team reviews the resulting national workbank to assess the practicalities of delivery, including reviewing the Guide to Railway Investment Projects (GRIP) development level, delivery mechanism, possession opportunities and utilisation of on-track plant. As a high level sense-check, we also use our decision support tool (T-SPA) to generate forecasts of aggregate renewal volumes and compare these against the bottom-up plans.

Expenditure and activity

The improvement in the quality of maintenance since the transfer in-house has continued during the last year. Plain line rail grinding has been implemented on a cyclical basis on most of our main lines, leading to better control of rolling contact fatigue and improved track alignment. Improved ultrasonic rail testing regimes based on the Ultrasonic Testing Unit and Sperry manual testing equipment are being progressively implemented across the network, leading to earlier detection of rail defects and lower numbers of broken rails.

S&C refurbishment is carried out on our most heavily used routes to improve track alignment and extend service lives. This includes the installation of cast centre block crossings, spot re-timbering and the welding and stressing of layouts. In addition, better quality tamping, stoneblowing and manual maintenance of joints continue to deliver improved track geometry. However, we will continue to deliver high levels of rail renewal, and plan delivery of 958km in 2006/07, compared to the 930km projected in the 2005 Business Plan. This is due to a variety of factors, including:

- an increase in the propagation of defects in rail installed before 1976, due to the increased axle loads of the new generation of rolling stock combined with cumulative tonnage and wear;

- an increase in surface defects, particularly rolling contact fatigue, due to new rolling stock with higher axle loads and increased traction;
- an improvement in our inspection methods that enables defects to be detected earlier, enabling better planned removal and reduced risk of breaks; and
- a more strategic approach to rail renewal, targeted at rail installed before 1976 on higher speed and/or higher tonnage routes and locations where clusters of defects have been identified.

We have also included a provision for 120 composite kilometres per annum of plain line work to be delivered through our Maintenance organisation, specifically to support the achievement of our objective to reduce temporary speed restrictions caused by track condition to a minimum by the end of Control Period 3.

There are a number of other reasons for the increase in forecast expenditure in 2006/07. These include an increase in raw material prices such as steel (£12 million) and the inclusion of items of work transferred to the core track programme as the West Coast Route Modernisation moves towards completion (£25 million).

Achievement of the planned volumes for the expenditure shown depends on the delivery of a range of efficiency initiatives that are being driven by our track business improvement team, including:

- standardisation of delivery methods for the principal categories of track renewal;
- using the national buying power of the company to continue to reduce costs across a range of products and services; and
- further improvements in wagon utilisation, engineering train planning and communication.

We are continuing with the proactive renewal of key S&C layouts, targeting high priority routes and locations already covered by resignalling schemes.

Full programmes of work have been planned on the Western and London North Eastern territories in 2006/07 for the new high output track relaying train (HOTRT) and the two new high output ballast cleaning (HOBC) systems. This builds on the experience gained in building up production rates with the HOTRT and one HOBC during 2005/06, principally on the Great Western Main Line. The HOTRT and HOBCs will be supported by the partial redeployment of two medium output ballast cleaners, previously used on the WCRM project, to other routes. In addition, the resleepering programme for rural and freight routes in 2006/07 has been devised to extend the life of the asset where possible and minimise the need for complete renewals.

Other specific issues being addressed by the track renewals programme include:

- ballast degradation under concrete sleepers track;
- the general deterioration of softwood sleeper jointed track installed in the 1950s and early 1960s and some associated fastening types;
- gauge spread risk on wood sleeper track with pan 8 baseplates on curves;
- deterioration of obsolete rail fastening systems on concrete sleepers installed in the 1960s; and
- deterioration of fastening systems in some sections of slab track in tunnels.

The introduction of new passenger rolling stock, primarily in the south east of England, has significantly increased the tonnage of passenger traffic. Inspection and other cyclical maintenance tasks have been increased where necessary to address this. However, the physical effects on the track of the new rolling stock are complex and will take some time to become fully apparent. Therefore the full impact on future renewal requirements cannot, at this stage, be forecast with complete confidence.

The impact of changes in forecast freight growth has been assessed and included in the forecasts shown. The rate of deterioration on certain routes, particularly between Scotland and the Humberside ports to the Yorkshire power stations, has increased dramatically resulting in an increased renewal requirement for the remainder of the control period.

Although we have made good progress to date with achieving efficiencies on our track programme, we are unlikely to achieve the ORR efficiency target in 2006/07. Our projections assume that we will achieve ORR's targets in the final two years of Control Period 3, but there remain some significant challenges to identify how we achieve all these savings and we have yet to finalise our plans for how we will work with our contractors to deliver this objective.

Civils

The planned civils renewal expenditure, excluding work being carried out under WCRM, is shown in Figures 5 and 6.

Figure 5 Civils expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
Underbridges	96	120	108
Overbridges	11	13	23
Bridgeguard 3	17	27	20
Footbridges	6	7	8
Earthworks	67	81	49
Tunnels	11	13	15
Culverts	1	4	2
Coast & estuary defence	5	5	6
Retaining walls	2	3	3
Major structures	44	33	37
Minor works	37	43	45
Scheme development	41	39	36
Other	51	46	61
Over-planning	(26)	(31)	(27)
Total	364	403	385

Figure 6 Civils activity volumes

	2006/07	2007/08	2008/09
Underbridges	51,457	68,645	40,736
Overbridges	5,088	9,962	7,139
Bridgeguard 3	5,782	7,515	1,337
Footbridges	1,281	1,884	1,636
Earthworks	274,704	529,895	322,437
Tunnels	11,545	10,694	14,615
Culverts	140	663	150
Coast & estuary defence	1,417	2,288	2,039
Retaining walls	795	1,114	1,149
Major structures	53,227	62,584	63,396

Methodology

A three-stage process has been followed in the development of the plans. Firstly, all structures are subject to annual visual inspections and detailed examination every six years, with their condition scored using the Structures Condition Monitoring Index (SCMI). In addition, detailed assessments are carried out every 18 years to confirm the integrity of the structures. Initial territory level reviews of structure reports (including SCMI score, risk assessment and description of serious visible deficiencies for each asset and site) are undertaken to identify both safety-driven and condition-led maintenance and renewals needs.

Secondly, individual proposals are evaluated and ranked through consideration of the type of route the asset is on and the strategy for that route, whether or not the proposal eliminates or avoids a temporary speed restriction (TSR) and an assessment of whole-life cost issues. Proposals are

managed within an overall policy of restricting preventative maintenance until work becomes essential to deal with specific defects, then restoring assets to a condition that ensures their long-term reliability. From this, the ranked proposals are assembled into workbanks by year.

Thirdly, following peer reviews to ensure consistency of approach between territories, reviews are undertaken to confirm that the plans can be delivered, both in terms of our internal resources and the supply chain. Each territory has five-year civils framework contracts in place, and where necessary, the territory teams involve the framework contractors in the early planning of the projects to ensure that construction and resource issues are fully addressed.

Earthworks (embankments and cuttings) proposals follow a similar three-stage process. Earthwork reports are based on cyclical visual examinations. These are carried out annually for poor condition earthworks, every five years for marginal condition earthworks and special examinations responding to incidents such as reported slope failures and rock falls. Proposals resulting from these examinations are then prioritised by the need to address safety issues such as visible defects or sites monitored to manage risk, performance issues such as lifting or avoiding speed restrictions and to fit with route strategies, including changes in volume or type of traffic. Peer reviews and deliverability reviews are undertaken to produce the final plans.

We also review the plans for civils with other engineering teams, particularly track, to maximise efficiencies and strategic alignment through the use of shared possessions.

Depending on the complexity and nature of defects, feasibility studies are carried out and other interested bodies are consulted in order to secure the optimum solution. Larger schemes may span two or three years, particularly where multiple options must be evaluated and designs completed before extended possessions can be sought.

Expenditure and activity

Remediation remains the defining characteristic of the workbank, with full renewal of assets being an exception justified by whole-life considerations. Renewal, therefore, tends to apply to a relatively small proportion of the asset base, leaving the majority of assets requiring some level of maintenance. With careful targeting of activity, we intend to reduce progressively the maintenance and renewal backlog and manage the asset stock to an optimum condition, within current funding constraints.

Note: Civils activity volumes are measured in square metres, except coastal and estuary defences which are measured in linear metres.

Our plans continue to focus on sites that are liable to present the greatest potential impact to safety and performance. In this context, the performance impact could be the imposition of speed restrictions or even closure in the event of uncertainty about an asset's reliability.

The reduction in forecast levels of expenditure for earthworks and tunnels from that published in the 2005 Business Plan is largely the result of reclassification to minor works and scheme development. Minor works are high priority activities, normally with a value less than £50,000 that will arise during the year in order to avoid major deterioration or to remove a significant hazard.

Over the last year, our dedicated major structures team has continued to develop detailed plans for specific major structures. As a result of this refinement, we are now forecasting expenditure of around £114 million, an increase of £20 million on the forecast in the 2005 Business Plan over the next three years. This includes £13 million per year on the refurbishment of the Forth Bridge, and £24 million on remediation to the Newcastle High Level Bridge.

Where required, forecast traffic growth has been taken into account when prioritising individual schemes. For example, the growth in Anglo-Scottish coal flows will require some remediation measures to be brought forward to maintain performance and avoid fatigue damage to structures.

Our civils renewals are delivered through an established supply chain of consultants and contractors. Over the last year, we have awarded framework contracts in each territory to deliver the majority of the programme for the next five years. These contractors are already fully mobilised and delivering this year's portfolio of projects. However, where considered appropriate, certain projects will be competitively tendered to obtain the best commercial terms for Network Rail. We are also in the process of setting up territory-based minor works contracts designed, primarily, to deliver individual items of work with a value of less than £50,000. These contracts are scheduled to be awarded early in 2006.

The efficiency savings we have achieved to date on our civils programme are ahead of the ORR target. Although we are continuing to push for further efficiency savings, we expect total savings over the control period to be broadly in line with the overall ACR03 target.

Signalling

The planned signalling renewals expenditure, excluding work being carried out under WCRM, is shown in Figures 7 and 8.

Figure 7 Signalling expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
Resignalling	218	309	316
Minor works/other	231	252	262
Over-planning	(3)	(66)	(10)
Total	445	495	568

Figure 8 Signalling activity volumes

	2006/07	2007/08	2008/09
Workbank (SEUs)	669	1,429	1,443
Over-planning	(6)	(185)	(41)
Resignalling (SEUs)	663	1,244	1,402

Methodology

Items of work are identified for inclusion in the renewals workbank by territory signal engineers based on asset condition and preservation of the existing safety and functionality, consistent with the signalling asset policy.

The Signalling Infrastructure Condition Assessment (SICA) model has been developed as our primary tool for the assessment of asset condition and the prioritisation of signalling system renewals. The SICA model combines qualitative reporting from site inspections with quantitative modelling, and generates an assessment of the condition of individual elements present at the site with a weighted summary for the site as a whole. Assets within the site are broken down into groups, known as elements, each of which is expected to have a notional life, based on expert opinion of the typical lifespan of these elements. These elements include, for example, interlockings, wiring/cables, location cases, signals and level crossing circuits.

The model combines six condition factor scores for each of these elements to predict when they will require replacing. The factors include condition, maintenance and faulting requirements, compliance to standards, history, environment and trend. The combination of the six factors for each of the elements provides the nominal life or remaining life. The model then combines these lives through a weighted average to give an indication of the life of the site as a whole.

SICA assessments are carried out at two levels. Primary SICA assessments focus on the factors driving interlocking life and provide a means to rank condition between sites, thus focusing on asset system condition driven priorities. Secondary SICA assessments provide a more comprehensive evaluation of asset system condition, increasing confidence in results and providing a method to

evaluate and compare renewal and maintenance options, allowing a direct comparison of results with other sites and priorities.

Secondary SICA assessments are undertaken at specific sites where the primary results indicate a need for a more detailed assessment. Condition assessment scores are entered for twenty-nine separate elements and weighted condition scores calculated, enabling the signal engineer to determine whether targeted sub-system renewal, such as cable replacement, will be effective in extending the life of a signalling installation. If the condition of the majority of the sub-systems is poor or they cannot feasibly be life extended, then complete replacement with a new signalling system is necessary.

A specific SICA module has recently been introduced to determine the long term renewals requirements of level crossings. The requirements for level crossing renewals were previously assessed using a combination of professional judgement of the overall asset system condition, the SICA assessment of the interlocking, and maintenance reports of asset condition.

Development of the minor works portfolio is based on historic cost profiles from similar activities. As part of the activity underway to produce signalling interlocking data cards, we are developing unit costs for minor works activities. We expect to have an initial view of unit costs by winter 2006 and these will facilitate the 'bottom-up' estimation of costs in the future. Minor works items can include both targeted renewals and reactive renewals. Targeted renewals address elements of an interlocking, either to retain the identified date for renewal of the complete interlocking or to life extend the complete interlocking to the identified date for renewal. Reactive renewals are based on

asset performance and advice from maintenance reports.

It has been recognised that, in most cases, the most cost effective solution for mechanical signalling renewals is life extension. As a result the workbanks now include provision for continuous life extension of these interlockings and, in most cases, there is no provision for complete renewal.

Items of work identified for inclusion in the workbank are reviewed for synergies and conflicts with schemes being developed by our other engineering teams, particularly track. Once the workbanks have been compiled, they are validated by peer review, carried out by experienced senior engineers, to ensure consistency of application of the SICA tools and compliance with the asset policy.

The delivery team conducts a review of the resulting workbank to assess the practicalities of delivery, including the proposed delivery mechanism and the available possession opportunities. Where this deliverability review results in a decision to defer an item of work, the provision for minor works is re-assessed to ensure that the deferral can be appropriately managed.

Expenditure and activity

In ACR03, ORR recognised that uncertainty existed in the forward projections of volumes, costs and technologies that were available and associated with signalling. It concluded that there should be no increase in signalling renewals from 2005/06 levels until a more robust signalling plan was developed. Furthermore, it recognised that the signalling renewals strategy and associated volumes may be subject to further change due to the development of the European Rail Traffic Management System (ERTMS) programme. It proposed to undertake an interim review into

Figure 9 Major resignalling projects

Project	SEUs (estimate)	Indicative commissioning date	Comments
West Midlands	3,100	Final 2015	Large programme to replace signalling equipment in the West Midlands area. It will comprise multiple smaller projects. The area is expected to be controlled from a major control centre in Saltley.
East Midlands	3,100	Final beyond 2015	Complete modernisation of a large part of the network, centred on the Midland Main Line. To be delivered in phases comprising resignalling of Trent, Nottingham, Leicester, Derby, Midland Main Line to London, Sheffield, and a number of associated lines.
Cardiff	683	2011	Renewal of signalling in the Cardiff and Vale of Glamorgan areas of South Wales.
Newport	660	2012	Renewal of signalling in the Newport area including portions of the lines to Hereford and Gloucester.
Basingstoke	313	2008	Renewal of signalling and track in the Basingstoke area. Currently at GRIP 4.
Colchester – Clacton	291	2008	Renewal of signalling on the Great Eastern main line around Colchester and on the branches to Clacton and Walton-on-Naze.
Glasgow Central	291	2009	Interlocking renewal scheme, limited replacement of external equipment. Likely to be SSI. Control options for this and other schemes in Scotland are being considered.
Portsmouth	251	2007	Renewal of signalling and track in the Portsmouth and Havant area. Currently at GRIP 4.
Port Talbot (East)	208	2008	Renewal of signalling in the Port Talbot area of South Wales, incorporating Bridgend. Currently at GRIP 4.

signalling expenditure. Part one of the signalling interim review assessed the medium-term funding needs and reached its final conclusions in December 2005, resulting in an increase of around £180 million (2005/06 prices) over the remainder of Control Period 3. The decision has now been made to combine part two, which assesses the longer term requirements, with the main Periodic Review 2008 (PR08) process, which will assess all of our funding requirements for Control Period 4.

'Other' expenditure includes the renewal of control centre systems or components that are not being carried out as part of a wider resignalling scheme.

Deliverability is still a critical constraint to achieving the required renewals volumes. In May 2004, we implemented a new delivery organisation, including a design office, for the development and design of signalling projects. To achieve the delivery of the current plan we are increasing progressively the size of this organisation to around 700 posts. The present headcount is around 500 and we are on target to complete the organisation's recruitment over the next 12 months.

Over the last year we have made good progress towards achieving signalling efficiencies and we expect total savings over the control period to be broadly in line with the overall ACR03 target.

Figure 9 illustrates the location and size of a number of our major resignalling projects which have significant spend over the next three years.

Electrification

The planned electrification renewal expenditure and volumes, excluding work being carried out under WCRM, is shown in Figures 10 and 11.

Figure 10 Electrification expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
AC systems			
HV switchgear	6	14	15
HV cables	–	0	0
Booster transformers	0	0	0
Grid supply points	1	1	1
OLE re-wiring	22	11	1
OLE spanwires	4	2	1
OLE campaign change/refurbishment	10	12	11
OLE structures	4	1	2
Other	13	13	20
DC systems			
HV switchgear	12	15	14
HV cables	11	8	6
LV switchgear	6	8	7
Transformers/rectifiers	4	6	9
Grid supply points	0	1	0
Conductor rail	5	4	3
Other	5	6	10
SCADA	2	3	7
Over-planning	(25)	12	14
Total	82	118	120

Figure 11 Electrification activity volumes

	2006/07	2007/08	2008/09
AC systems			
HV switchgear (CBs)	31	102	183
HV cables (km)	–	–	6
Booster transformers (no)	–	16	12
Grid supply points (CBs)	2	2	1
OLE re-wiring (t. length)	129	167	19
OLE campaign change /refurbishment (t. length)	894	1345	1554
OLE spanwires (no.)	341	357	242
OLE structures (no.)	48	33	52
DC systems			
HV switchgear (CBs)	50	103	107
HV cables (km)	35	63	51
LV switchgear (CBs)	27	181	160
Transformers/rectifiers (no)	12	25	36
Grid supply points (CBs)	2	6	1
Conductor rail (km)	15	33	35

Note: Tension length (t length) is the standard measure for overhead line rewiring and campaign changes. AC and DC circuit breakers are referred to as CBs.

Methodology

The forecasts have been developed at a local level from the results of inspections, including the use of the mobile electrical network testing, observation and recording coach, which is used to monitor and record the dynamic current collection performance of the overhead contact system. Our territory engineers recommend renewals based on asset policy, asset condition information from area maintenance teams, and liaison with the other engineering disciplines to identify potential project synergies. Prioritisation is generally given to overhead line, supervisory control and data acquisition (SCADA) systems and grid supply schemes, followed by oil-filled high voltage switchgear and oil-filled high voltage cable renewals. However, with all renewal proposals, careful consideration is given to the safety and performance impact of deferral and these considerations tend to dominate the prioritisation process. The resulting workbanks are validated by peer reviews undertaken centrally to ensure that the renewals are prioritised on a consistent basis and that decision-making is robust and in accordance with the engineering policy and standards. The plans are then further validated for deliverability.

Our plans assume efficiencies in line with ACR03, based on the efficiency initiatives outlined in the Major Projects and Investment (MP&I) section of the Management Plan.

Expenditure and activity

We have made very good progress with the overhead line (OLE) refurbishment and campaign change programme for the East Coast Main Line (ECML) with the implementation of spanwire and catenary wire renewals on the Great Northern section of the ECML. Further OLE refurbishment work is planned for 2006/07 and 2007/08. Work is also underway on the replacement of the OLE between Glasgow Shields and Gourrock, with the work programmed to continue through to completion in 2007/08.

However, overall levels of OLE expenditure between 2006/07 and 2008/09 are slightly reduced from last year's forecasts. This is due to OLE spanwire renewal work being brought forward and delivered in 2005/06 and a reduction of around 115 tension lengths in the proposed OLE campaign change and contact wire renewals on the Glasgow North and South Electrics, following the completion of a condition survey.

We are currently considering options for replacement of the fixed termination overhead line equipment located between Liverpool Street and Chelmsford/Southend Victoria with a modern, high reliability system. The existing fixed termination system design currently leads to the application of temporary speed restrictions during periods of high temperatures. In addition, a major dewirement

occurred at Bow in the spring of 2005, closing Liverpool Street station and its approaches for 31 hours. The aim is to remove these design deficiencies and provide a simpler, easier to maintain, quicker to repair, modern, automatically tensioned system. There are a number of other factors which have an impact on the business case for such a scheme, including developments emerging in the Stratford area such as the North London Line conversion to the Docklands Light Railway, East London Line Extension (phase 1), Crossrail and London 2012, as well as the 2007 opening of Channel Tunnel Rail Link (CTRL) phase 2 generating additional local traffic on the Great Eastern route from Stratford International. In addition, upcoming closures of the route for other works present a unique opportunity to undertake these works which require multi-track access.

There have been no significant changes to the volumes of electrification distribution renewals. However, the national 25kV oil-filled switchgear renewals programme has been re-prioritised to renew first the 'ASEA' type switchgear in the South East territory ahead of the 'K11' type switchgear on the West Coast Main Line. This is due to a re-evaluation of the failure risk of these assets, following a major failure.

We have reduced our forecasts for conductor rail renewal, primarily to allow for a more realistic increase in delivered volumes between 2007/08 and 2008/09 in South East territory. This revised profile will also give us the opportunity to improve the prioritisation of conductor rail renewal in later years as train-borne conductor rail wear measurements start to become available.

We expect the forecast renewal activity, in combination with planned maintenance activity, to deliver the target outputs relating to the number of traction power supply failures causing more than 500 minutes of delay, preserving network capability, and maintaining the average electrification condition.

Telecoms

The planned telecoms renewal expenditure and volumes, excluding work being carried out under WCRM, are shown in Figures 12 and 13.

Figure 12 Telecoms expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
GSM-R/FTN	138	177	196
Concentrators			
Large	12	7	7
Small	5	7	7
DOO CCTV	7	6	4
Voice recorders	1	2	3
CIS systems	17	10	9
Telecoms cables	3	3	3
Public emergency			
telephone system (PETS)	1	1	0
Long line PA	0	1	2
Clocks	0	0	0
Other	8	15	11
Total	191	229	241

Figure 13 Telecoms activity volumes

	2006/07	2007/08	2008/09
Concentrators (no)			
Large	16	7	15
Small	41	54	46
DOO CCTV (systems)	249	306	122
Voice recorders (no)	20	102	140
CIS systems (stations)	78	93	174
PETS (level crossings)	56	27	23
Clocks (no)	20	74	10
Long line PA (systems)	11	60	53

GSM-R/FTN

Telecoms expenditure continues to be dominated by the GSM-R/FTN programme, which together with the cab mobile enhancement work, form the National Telecoms Programme. The first element of this project consists of the installation of a new national Global System for Mobile Communications for Railways (GSM-R) radio system which will provide secure voice and data communications over the whole infrastructure. GSM-R will also be necessary to support ERTMS should the proposal be adopted. The second element comprises the installation of a new national Fixed Telecom Network (FTN) to replace the existing life-expired cable and transmission network to support GSM-R and our operational and business telecoms needs.

The expenditure to date is around £450 million and commissioning of the new systems is scheduled to complete in 2012 at an expected final cost of £1.3 billion. This expected final cost includes around £430 million of efficiency savings over the life of the programme. Around £200 million of these

savings are attributed to the use of super-armoured cable. Further opportunities for efficiencies are being evaluated and will be added to the overall efficiency plan when validated.

Of the 16,000km of transmission route to be completed around 9,200km has been surveyed, and approximately 4,500km of copper and 4,700km of fibre cables have been installed.

Other telecom renewals

Our telecoms asset renewal strategy is to replace life expired assets in modern equivalent form to maintain the safety and performance of the network in a steady state condition in order to support the operational and business needs of a modern railway.

Methodology

The plans are based on detailed workbanks built up by our territory telecoms engineers using a combination of projected asset life expectancy (Figure 14), asset condition information (obtained from fault records, performance data and maintenance inspections) and engineering judgement of the continued cost effectiveness of maintaining the asset (including consideration of obsolescence issues and spares availability).

Figure 14 Telecoms asset lives

Equipment/category	Life expectancy (yrs)
Telephone concentrators	10
Voice recorders	7
Public level crossing systems	10
Optical fibre cables	30
Copper cables	25
Transmission systems	10
Radio systems control processors	10
Base stations	15
Uninterruptible power supplies	10
Rectifiers/chargers/batteries	5
Public address systems	10
Customer information systems	10
CCTV (DOO) systems	10
CCTV (retail) systems	7-10

The workbanks are subjected to a centrally led peer review process to validate the judgements applied at the territory level. The review is partially office-based, where supporting documentary evidence can be reviewed and processes discussed, followed by on-site validation where scope and assumptions can be tested.

The proposed renewals are consolidated centrally by the telecoms engineering team and prioritised nationally, considering safety and performance issues, asset condition (life expectancy, maintainability, rates of failure and physical condition), GRIP stage, route classification and

contractual issues. Each of the factors is given a weighting and the aggregation of these is used as the overall priority ranking.

Stakeholders are consulted as early as possible in the project lifecycle. For example, train operating companies are consulted for renewals carried out on stations, such as customer information systems and long line public address systems. This involvement can extend into the renewal planning phases so that complimentary enhancements works can be carried out at the same time as the renewal. Internally, other engineering teams are also consulted to confirm that the proposed renewals fit with the strategies for other assets. The renewals plans are also regularly discussed with the GSM-R/FTN project team at a territory level to ensure alignment.

Deliverability is assessed through detailed reviews of individual project programmes and resource requirements against the defined workbank. The project programmes are initially based on generic project programme profiles (containing key milestones associated with the investment authority process and contract event milestones) to enable the correct resource requirements within the supply chain to be assessed.

Expenditure and activity

Our expenditure plans for the next three years show an increase from the spend levels of the last two years consistent with ACR03. The plans assume efficiencies in line with ACR03, based on the efficiency initiatives outlined in the MP&I section of the Management Plan.

The largest spend category is telephone concentrators, making up around 30 per cent of the total annual telecoms expenditure. The asset has a mixed age profile with many systems now only able to be supported by the recovery of strategic spares following the renewal of other systems nationally. Telephone concentrator renewals are aligned with signalling renewals, wherever possible, to maximise efficiency.

There has also been a drive towards achieving greater efficiencies in the delivery of voice recorder systems through the combination of the core voice recorder renewals programme with the safety-driven installation of around 350 new units. The combined programme will be a significant project which will be delivered over the next three years.

Of the four new territory based renewals framework contracts, three have now been mobilised and remaining contractual issues are being resolved in order to mobilise the fourth. These are being used as the primary contractual vehicle for the delivery of telecoms renewals and will help us deliver telecoms renewals quickly and efficiently.

A significant number of copper and transmission telecom assets, previously contracted out under finance lease agreements, transferred back to our ownership in April 2005. As we improve our knowledge of these assets, we may need to revise our planned expenditure. We have, however, included a provision of £6 million over the next three years for this potential increase.

The review of Station Access Conditions includes proposals for all retail assets (customer information systems, clocks and long line public address systems) on franchised stations to be transferred from Network Rail to the train operating companies (TOCs), leaving only those retail assets at the 17 non-franchised stations under Network Rail management. This change is likely to be implemented through negotiations with the TOCs on a case-by-case basis. Until agreement on the proposals has been reached and the changes have been implemented, we are continuing to plan for the renewal of these assets at all stations.

Operational property

The planned operational property renewal expenditure, excluding work being carried under WCRM is shown in Figure 15.

Figure 15 Operational property expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
Stations	198	191	178
Depots			
Light maintenance	9	3	11
NDS	4	2	2
Lineside buildings	5	12	10
Total	216	207	201

Methodology

Workbanks are assembled initially at territory level by the asset stewardship teams who carry the responsibility for overseeing inspection regimes and other asset management activity. The workbank items include renewals schemes, feasibility schemes, inspection regimes, planned preventative maintenance regimes and reactive provisions. These reactive provisions provide for elements of work that cannot be planned but are likely to emerge during the years of the plan.

The workbanks are prioritised through consideration of health and safety risk, current and imminent loss of functionality of assets and statutory obligations. Customer requests are also considered when prioritising items of work to ensure stakeholder needs are met.

Sample reviews of the prioritisation process followed within the territories are undertaken by the central business planning team, followed by a comprehensive peer review of the prioritisation of all high priority work items in 2006/07 to ensure consistency of approach across all territories.

The recent move of operational planning asset stewardship responsibility from Railway Estates to Engineering offers opportunities to develop an asset management approach consistent with that used for our civils assets. As a first step towards this, we will begin to develop a common planning methodology during the next year. This, combined with improved asset knowledge and work scheduling, should lead to better specification of workbanks, which in turn should lead to a reduction in the relatively high proportion of reactive works that have been necessary historically.

Our ability to deliver improvements in our asset stewardship and planning capability centre around the development of a single, centralised asset management system for our operational property assets, known as ATRIUM. An accelerated programme of asset inspections for the first complete portfolio inspection cycle will commence in summer 2006 and is expected to lead to full population of the system in the next three years. The system will increase efficiency through improved works forecasting and business planning, resulting in more robust views over long-term maintenance and renewals expenditure requirements, more consistent work practices across the company and improved fault management. The system will also generate output measure data such as the station and light maintenance depot condition indices, station facilities score and work plans envisaged by the proposed new station and depot codes.

Expenditure and activity

Our expenditure plans are broadly similar to last year's forecasts.

We are forecasting a stations expenditure of £198 million in 2006/07, falling to £178 million in 2008/09. This includes around £120 million over the three years of the plan on five strategic renewals schemes at Edinburgh Waverley (£7 million), London Euston (£16 million), King's Cross (£47 million), Paddington (£24 million) and Victoria (£26 million). The forecasts for these projects have been re-phased to reflect the most recent planning and deliverability reviews.

We are currently in the process of revising the station condition index (SCI) with ORR to improve the measure of our station stewardship. This is due for implementation in 2006. Once improvements to the SCI have been implemented, a similar process is likely to follow for the light maintenance depot condition index.

In line with our regulatory targets, we will continue to try to maintain average condition by focusing on prioritisation of activity and efficient delivery. However, we need to establish whether we can maintain condition over the long-term within the level of funding provided through ACR03.

Achieving ORR's efficiency targets by the end of Control Period 3 will be a significant challenge and much work remains to identify how this can be achieved.

Plant and machinery

The planned plant and machinery renewal expenditure, excluding work being carried out under WCRM, is shown in Figure 16.

Figure 16 Plant and machinery expenditure

£m (2005/06 prices)	2006/07	2007/08	2008/09
Fixed plant	15	24	30
Point heating	10	10	10
Signal supply points	1	1	3
Remote condition monitoring	8	16	8
Mobile plant/vehicles	42	30	22
Total	76	80	73

Note: Point heating and signal supply points are sub-categories of fixed plant.

Our plans for fixed plant are based on 'bottom-up' workbanks. The largest portion of fixed plant spend relates to point heaters, on which we plan to spend around £10 million per year over the next three years. The renewal of standby generators, uninterruptible power supplies and depot plant is also included in these forecasts. Our territory engineers recommend renewals based on asset policy, asset condition information from area maintenance teams and liaison with other engineering teams to identify potential project synergies. Our operational property team recommend renewals for depot plant such as wheel lathes and carriage washers based on asset policy and asset condition information. The resulting workbanks have been validated by peer reviews undertaken centrally to ensure that renewals are prioritised consistently and that decision-making is robust and in accordance with the engineering policy and standards. A further review to consider deliverability issues is also undertaken.

The mobile plant and vehicles forecasts relate to the introduction of improved asset condition measurement equipment, final payments on the purchase of high output ballast cleaning and track relaying equipment, and the overhaul and renewal of rail fleet assets such as stoneblowers, MPVs and wagons.

Our plans for remote condition monitoring (RCM) play an important role in our move away from a 'find and fix' approach, towards a 'predict and prevent' approach to asset management. The plans include expenditure on new systems for the monitoring of power supplies, track circuits, bridges, wheel impact and points condition. The forecasts also cover the renewal of our existing RCM systems, such as points heater monitoring,

hot axle box detectors, relay event logging and pantograph monitoring.

West Coast Route Modernisation

The total level of renewals and enhancement expenditure for the West Coast Route Modernisation (WCRM) is shown in Figure 17. Beyond Control Period 3, all renewals expenditure on WCRM will be carried out by the core renewals functions, except where it is part of a major project, for example, Rugby station remodelling.

The current programme cost forecast is £8.125 billion compared with the projection of £13 billion (2005/06 prices) when Network Rail took over the business. However, this cost will result in a shortfall of £246 million against the allowance in ACR03 for Control Period 3. Whilst additional efficiencies will be targeted, it is unlikely that these will address fully the shortfall. However, funding for schemes such as Stafford and Milton Keynes to be delivered in Control Period 4 is not yet agreed.

WCRM is based on the need for major track, signalling and OLE renewals. The renewals opportunity has been used to enhance both capacity and line speeds. Many of the original objectives of providing improved frequency and journey times for a fleet of Class 390 tilting trains have been achieved. High speed tilt operation has now been introduced between London and Glasgow, Manchester and Birmingham.

Achievements through 2005:

- station platform extensions and associated station works;
- linespeed enhancements, giving improved journey time to Glasgow;
- GSM-R radio lineside equipment, from Euston to Manchester and Birmingham;
- loading gauge enhancement from Crewe to

Trafford Park;

- Birmingham International turnback facility;
- Glasgow and South Western route clearance for Class 390 diversions;
- additional platform at Stockport; and
- Rugby to Coventry linespeed enhancements.

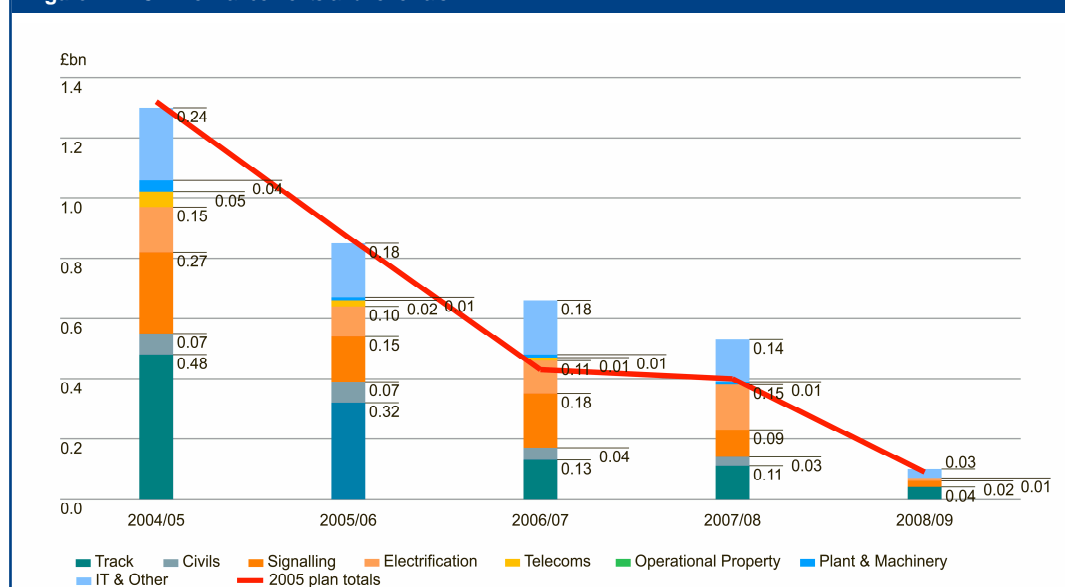
Journey times have already been reduced. For example, the Euston to Manchester journey time is now 135 minutes with four stops compared with 161 minutes before the project commenced. This will reduce further to 130 minutes by December 2008. Capacity has already been increased by the provision of schemes such as the centre line turnback at Tring, 12 car platforms for services south of Northampton, and additional platforms at Birmingham New Street and Wolverhampton. Further capacity increases in the form of 28 freight paths each way per day will be available when the Rugby and Thames Valley four tracking projects are completed, whilst the separation of the branch line from the main line at Wigan will lead to a gain in network flexibility.

Performance continues to improve commensurate with the renewed infrastructure, despite the significant increase in train frequency. This has been demonstrated in the nine months between April 2005 and December 2005, when the Public Performance Measure (PPM) for Virgin West Coast has improved from 80 to 87 per cent, compared with the same period the previous year, as a result of the ongoing joint performance improvement programme. During the same period, the Silverlink PPM has maintained a level of between 89 and 92 per cent each period.

Activity scheduled for 2006 and beyond

Additional incremental line speed enhancements will be brought into service in 2006. In addition, there now remain a number of areas of restricted capacity which severely limit the scope for any

Figure 17 WCRM enhancements and renewals



further growth in passenger and freight services, and it is these which WCRM will be addressing during the coming years.

The following major schemes will be carried out over the remainder of the Control Period 3:

- Crewe – Weaver remodelling;
- Nuneaton phase 2 remodelling;
- Rugby station remodelling;
- Trent Valley four tracking project;
- Traction power supply upgrade project;
- Northampton phase 2 (faster access to bay platforms, signalling control to Rugby, connection to new depot).

Figure 18 WCRM milestone and CP3 timescales

Key milestone	Completion date
Wigan remodelling	
commissioning	Apr 2006
Sandbach – Wilmslow	
resignalling	Jun 2006
Slow line speed	
enhancements	Dec 2006
Line speed enhancements	
– Weaver to Liverpool	Dec 2006
– Scotland	Dec 2006
– North of Preston	Dec 2006
Nuneaton phase 2	
resignalling works	Dec 2008
Crewe – Weaver	
remodelling works	Dec 2008
Rugby station remodelling works	Dec 2008
Trent Valley four tracking works	Dec 2008
Auto transformer power	
supply upgrade works	Dec 2008
Bletchley – Milton Keynes	
remodelling Works	TBC
Stafford development works (initial phase)	TBC

Although the major journey time commitments for 2005 have been achieved, further line speed enhancements are scheduled for completion in 2006. These include:

- slow line speed increases between London and Northampton from 90mph or below to 100mph over much of the route, resulting in a journey time improvement of up to two minutes;
- high speed train (HST) speed increases between Weaver and Allerton; and
- further line speed improvements north of Preston and in Scotland.

The separation of the Wigan to Liverpool line from the main line at Wigan has been deferred to spring 2006. This was as a result of silver migration being found in signalling relay equipment, necessitating additional, unplanned work. A short term timetable

modification has been agreed to mitigate the impact on local services over this period.

The majority of the schemes identified are planned for completion by 2008 in readiness for the December 2008 timetable change. Completion of the Bletchley – Milton Keynes scheme will not be possible in Control Period 3. A study is being carried out into the feasibility of completing the Milton Keynes functionality improvements by December 2008 to realise the revenue improvements that will result as early as possible, and to minimise engineering disruption after December 2008. Bletchley will follow for completion by 2010.

In the case of Stafford, the intention is only to develop a scheme during the current control period, with implementation planned during Control Period 4. Several options are being considered with DfT, all of which are likely to require Transport and Works Act (TWA) powers, which could be obtained towards the end of Control Period 3, at the earliest.

The Trent Valley four tracking project will provide an additional 20km of twin tracks, giving a near-continuous four track section of 200km length between London and Crewe. The only non-four track sections will then be approximately 11km between Rugby and Nuneaton which will remain as three track and approximately 4km of two track between Colwich and Stafford. It is considered these short sections will not create an unacceptable bottleneck. The situation is dictated by the very high cost of widening in the areas where there are major structures, for example, the Shugborough tunnel and viaduct. These also involve an environmentally sensitive area. The Nuneaton phase two remodelling is scheduled for completion by December 2008.

The other schemes are aimed at easing known congestion points, renewing ageing infrastructure and improving overall journey times. In the case of Bletchley – Milton Keynes, there will also be an improvement in local service capacity by increasing the number of platforms at Milton Keynes Central, reflecting the plans by the Office of the Deputy Prime Minister (ODPM) for large-scale expansion of the number of homes in the Bletchley - Milton Keynes – Northampton corridor. This scheme is jointly funded by ODPM (£24 million) and Milton Keynes Partnership (£6 million).

As the WCRM programme goes through a step-change, there are managerial and financial risks in the transition of activities from the programme back to the normal operational business. Efforts are being made to mitigate these by means of a policy designed to retain skills within Network Rail as far as possible, by facilitating the transfer of experienced West Coast employees to relevant

Figure 19 Enhancements expenditure

£m (2005/06 prices)	2005/06	2006/07	2007/08	2008/09
ACR2003 funded schemes				
Safety schemes	46	92	107	89
Transition schemes	168	75	7	105
WCRM	170	165	133	22
RAB funded schemes				
Network Rail Discretionary Fund	8	32	79	89
King's Cross	–	28	114	51
Access for All	–	28	35	37
Other	62	157	104	115
Outperformance funded	–	–	50	150
Third party schemes				
Transport Scotland	16	64	186	153
Welsh Assembly Government	4	8	24	23
Other planned and committed schemes	69	77	129	152
Total	542	724	967	984

emerging roles around Network Rail. Although there is a significant step change planned by April 2006, further, more gradual transition will occur over the subsequent three years, given that a substantial task remains with £1.6 billion of work still to be delivered.

We will continue to forecast future resource requirement plans and proactively review them with the national plans and industry availability to confirm that the plan remains sustainable.

Enhancements

This section outlines our enhancement plans which are organised into the following broad categories:

- schemes funded through the 2003 Access Charges Review (ACR03), including the Safety and Environment Plan, European Rail Traffic Management System (ERTMS) development work, West Coast enhancements and the transition projects which include the Southern New Trains Programme (SNTP), and further development of the Thameslink programme;
- schemes which have arisen since ACR03, which we will finance through borrowing and thereafter be remunerated through an addition to the Regulatory Asset Base (RAB). These include committed projects, such as Evergreen 2, station accessibility schemes and the King's Cross station improvement programme, and schemes which are funded through the Network Rail Discretionary Fund; and
- third party schemes, which are sponsored and funded by Transport Scotland, the Welsh Assembly Government, Transport for London, passenger transport executives, local authorities, developers, freight industry related schemes, and train operators. This expenditure ranges from the interface cost (in which the third party is paying for a project directly) through to the actual scheme cost (in which we pay for the

work and are subsequently reimbursed). We will normally be reimbursed on a 'pay as you go' basis for our activities on these schemes.

Following the Railways Act 2005, the responsibility for many schemes previously sponsored by the SRA transferred to Network Rail. For England and Wales, the DfT will specify the very largest projects and will determine the overall approach and by whom they are to be delivered. Medium sized schemes will generally be part of the package of measures needed to deliver the Government's outputs via the periodic review process, and small schemes will generally be taken forward by the industry.

Figure 19 sets out the projections for enhancement activities over the remainder of the control period. In some cases, the projects are at an early stage of development and the cost projections are indicative.

We have included summaries of these schemes in the appendices. The Route Plans also include further details of individual schemes.

Schemes funded through the 2003 Access Charges Review

Safety and environment schemes Pollution prevention

This national programme of works relates to securing compliance with recent environmental legislation concerning oil storage, and improvements to associated drainage systems, primarily at 49 light maintenance depots (LMDs) where trains are re-fuelled. This year the programme has been enlarged to include similar work at remaining depots and other locations where oil is stored.

In the last year we have:

- completed phase 1 works at all LMDs in England to achieve compliance with the oil storage regulations, which are not yet applicable in Scotland and Wales;
- progressed design work on the full scope of work at the LMDs in Scotland and Wales;
- initiated design work on phase 2 improvements to aprons and drainage systems at the LMDs in England; and
- completed defect surveys of the drainage system at the remaining LMDs and minor oil storage facilities at over 300 other sites.

We plan to continue this work with the following programme:

- continue to implement emergency works at specific sites where contamination occurs, or there is a high risk;
- continue design and implementation work to control any remaining risks to groundwater posed by the storage and use of oil at these sites;
- undertake design and implementation work at our depots in Scotland and Wales to meet standards equivalent to the oil storage regulations in England;
- continue implementation of works to minor oil storage equipment at over 300 other locations, for example, standby generators and signal boxes; and
- develop, design and subsequently implement improvements to aprons and drainage systems to mitigate any contravention of the ground water regulations at the remaining 42 light maintenance depots.

Implementation of all these works requires agreement with the train operating companies (TOCs) and depot facility operators (DFOs) to be reached. We will accelerate the entire programme to achieve completion by October 2007, one year earlier than previously planned.

Train protection and warning system – plus (TPWS+)

A programme of fitment of the train protection warning system – plus (TPWS +), as proposed by the Uff – Cullen inquiry, has been substantially completed. This provides enhanced protection at a total of 422 signals, which were considered to pose additional risk from the approach of trains travelling at more than 75 mph.

Train protection and warning system

Following commissioning of the train protection warning system (TPWS) across the network, we have identified a number of issues with the operability of the system. In particular the approach to buffer stops was considered to be too restrictive and the speed settings approaching permanent speed restrictions are also adversely

affecting the drivers' ability to control the train.

These are believed to have contributed to some cases where TPWS has stopped the train but the driver has reset the system and carried on. The industry as a whole has been in discussion with Her Majesty's Railway Inspectorate (HMRI) about potential adjustments to the system and its operational rules to reduce these problems and will be making some changes to the implementation arrangements later in 2006.

European Rail Traffic Management System

Network Rail took over industry leadership of the European Rail Traffic Management System (ERTMS) from the SRA in June 2005. The major deliverables for the remainder of 2005 were the production of a long term strategy report for DfT and putting the Cambrian early deployment scheme out to tender.

The long term strategy report, which was commissioned by DfT in 2004, sets out a national implementation plan and business case for the deployment of ERTMS over a 60 year period. It is closely aligned to the conventional long term signalling strategy and forms part of the long term industry vision of eventually moving to a railway which uses cab-based signalling. The report concluded that, whilst a cab signalled railway is the industry vision, ERTMS is currently not realistically affordable or economic and that currently it is not reasonably practicable to commit to network wide roll out. It is, however, necessary to continue with the development of a national programme and the implementation of the Cambrian early deployment scheme to learn how to deliver and operate a cab signalling system compliant with the technical specification of interoperability (TSI) at an economic cost.

Workstreams for 2006/07 fall into five main categories:

- Cambrian – select and appoint supplier, complete single option development and commence detailed design;
- capacity – undertake benefits maximisation and capacity and performance analysis work to assess viability of ERTMS at a route level, with the aim of ERTMS becoming a viable and affordable tool for resignalling;
- cost – detailed analyses of what can be afforded, the cost drivers and how to reduce them, exploitation of emerging technical development opportunities;
- confidence – managed communications and stakeholder engagement, including monitoring ERTMS developments in Europe; and
- capability and competence – determining and developing industry capability, including the development of proposals for changes to engineering and operational standards, and their subsequent incorporation into industry processes. This work-stream includes the development associated with the schemes

required, following the Cambrian early deployment scheme, to make ERTMS part of the 'day job' for resignalling; these are known as migration projects.

The programme takes strategic direction from the ERTMS strategy group (ESG), which is chaired by DfT. In December 2006, ESG will critically review the continued development of ERTMS to help determine what provision should be made in Control Period 4 and Control Period 5. This review will assess whether Cambrian is proceeding to plan, whether ERTMS is affordable, and what the cost reduction plan is to achieve this.

Transition schemes

Southern New Trains Programme

The Southern New Trains Programme (SNTP) was initiated in early 2002 to deliver major enhancements to the infrastructure that supplies electric power for traction. This was required to support the introduction of large fleets of new trains needed by South West Trains, Southern and South Eastern Trains to replace the Mark 1 fleet operating south of London. The programme has delivered £525 million of works across Kent, Sussex and Wessex routes, in conjunction with six framework contracting consortia.

Sufficient power supplies have now been provided to permit the introduction of new rolling stock running with equivalent sectional performance to the Mark 1 stock and with equivalent levels of resilience in the power supply system. This enabled all Mark 1 vehicles to be removed by the deadline of 30 November 2005.

There remains some work to be completed through 2006/07. This includes work on high voltage feeder routes which could not be completed earlier due to access restrictions; the addition of two further grid supply points; the doubling of local cabling to 15 sections of track; installation of harmonic filters; and final adjustment to substation and high voltage feeders which are required after a period of trial running.

GSM-R cab fitment

In addition to the GSM-R/FTN project, a separate enhancement project has been established to develop, design and fit GSM-R cab mobile radios. These are being fitted to rolling stock which is taking part in the GSM-R operational trial in Strathclyde, the extended operational trial in Strathclyde, and first of class fitment throughout the UK. The project will deliver a GSM-R cab mobile radio for all classes of rolling stock and enable the supply and ongoing maintenance of this radio for the mass fitment of the fleet.

A supply contract has been awarded and the drivers' panel layout has been agreed. Development of the drivers' panel is underway and factory acceptance is expected in 2006, with HMRI

approval to trial shortly thereafter. A contract to initiate the development phase of the project is expected to be awarded during 2005/06.

Thameslink

The Thameslink programme will provide the infrastructure to allow the operation of 24 trains per hour in each direction between a new St Pancras Midland Road station and the existing Blackfriars station (the 'core area'). The Thameslink service will operate over the expanded network with trains of up to 12 cars. Completion of the programme will increase the number of stations served from 51 to 169.

Thameslink will create new train paths in the core area, and will incorporate all current Thameslink services with those provided by other train operators. The new services will be created by joining those that currently terminate at London Bridge, Blackfriars and Cannon Street in the south, with services that currently terminate at Moorgate and King's Cross in the north.

The Thameslink programme, and a new franchise delivering more and improved rolling stock, will help to realise the following transport benefits:

- an increase of over 120 per cent of train capacity between Blackfriars and St Pancras Midland Road stations;
- the potential for an increase of 25,000 in passenger capacity in each three hour peak (07:00 to 10:00, and 16:00 to 19:00) to and from London by providing longer trains;
- an additional 580 million passenger kilometres per annum by 2016; and
- an 8 per cent reduction in the need for central London passengers to interchange with London Underground services during peak hours.

The development of the scheme in accordance with Network Rail and DfT requirements is managed by the Thameslink project development group, a joint committee of Network Rail and the DfT.

Achievements through 2005/06

During 2005 the focus has been on preparing for and managing the reopened Transport and Works Act inquiry, which closed in December 2005. The Inspectors' report has been submitted.

Other activity included restructuring the programme team to enable further stages of design development and construction planning. The statutory closures process has been 'refreshed' on guidance from the DfT, and a new round of consultation initiated.

Activity scheduled for 2006 and beyond

We will undertake sufficient development work to enable the Government to make decisions about the extent to which funding provision for detailed

design, development and implementation is available, and assess their preferred timing for that work. Our objectives for 2006/07 are a positive outcome to the Transport and Works Act (TWA) and closure processes, and delivery of technical, construction and cost options to support government decisions. We can then propose an approach which represents the most effective, least disruptive and best value generating solution in accordance with the powers and approvals sought, with the aim of securing funding approval for the programme progressing to implementation.

We also plan to develop the scheme construction strategy and the programme risk portfolio, and work with stakeholders both within and outside the rail industry to address concerns and develop support for the programme.

A list of schemes funded through ACR03 are in Appendices 14 and 16.

RAB funded schemes

Schemes funded by the Network Rail Discretionary Fund

The Railways Act 2005 gave Network Rail a wider remit for managing the process of appraisal for investment options. In support of this initiative the Secretary of State for Transport announced the creation of the Network Rail Discretionary Fund (NRDF).

The NRDF is a fund of £200 million covering the four year period from 2005/06 to 2008/09. The fund is to be spent on improvements to the network which benefit the whole industry, but are not of sufficient benefit to one party alone and would therefore not be carried out. Individual projects of up to £5 million that could not be justified through our normal investment criteria are eligible, subject to a rail industry business case. Projects in excess of £5 million may also be included, subject to agreement with ORR and DfT. Investment proposals must demonstrate value for money against the appraisal guidance being developed by the DfT and ORR.

The fund includes an allocation of around £20 million (approximately 10 per cent) for expenditure specifically in Scotland. Subject to ORR validation, the cost of the investment in England and Wales will be rolled up and added to the England and Wales RAB, with the costs incurred in Scotland added to the Scottish RAB.

We are consulting extensively with passenger and freight operators, and appropriate stakeholders, through the Rail Investment Review Group (RIRG) on any investment proposals being taken forward under the NRDF programme. External investors will also be able to contribute alongside the discretionary fund for specific projects which they wish to see taken forward.

Currently there are 106 short-listed schemes, of which 63 have been selected for fast track development. These schemes will take priority in the development work required to assess their individual business case. Each of the fast track projects will be evaluated through the development of its business case to gauge its continued desirability and fit with the DfT funding criteria. A number of these fast track schemes are already in the pilot stage, for examples, the part doubling of track between Coventry and Leamington; Peterborough to Werrington bi-directional signalling; and alterations to Tysely North junction.

A list of NRDF pilot schemes are shown in Appendix 17 with all fast track schemes funded through NRDF in Appendix 8.

King's Cross development

Within the last year approval has been given to progress the development and implementation of a new concourse at King's Cross station. The project will deliver a new concourse of sufficient size and with ample facilities to accommodate future passenger demand. This will link in with the changes to St. Pancras and CTRL, and will permit better interchange between London Underground and mainline rail services. It will comprise:

- enlarged passenger accommodation;
- retail accommodation;
- the refurbishment of the Western Range building;
- a new footbridge in the main train shed; and
- the construction of a new platform to the east of the station.

The planning application is due to be submitted in the first half of 2006 and a decision is anticipated by September. Detailed design will be carried out between 2006 and 2008, with construction starting in 2008. Completion of building works is scheduled for 2011 and demolition of the existing concourse and completion of the project is due in 2012. The cost of the project is currently estimated to be in the order of £300 million.

Access for All

The DfT has recently published a strategy for a ten year programme to improve accessibility to the rail network. The strategy builds on industry consultation undertaken by the SRA in 2005.

The strategy includes measures that the Government needs to lead, measures for TOCs to implement, and a programme of physical works for Network Rail to deliver. Together, these form a cohesive strategy for improving access to the rail network.

The key output from this ten year programme is, for each station that is in scope, to achieve an unobstructed and obstacle free 'accessible route' from at least one station entrance and associated drop-off points, to each platform and between

platforms served by passenger trains. Whilst the programme addresses the accessibility from high street to platform, it does not address platform stepping distances. Considerable work is ongoing to develop plans for the precise work that will be practically necessary to deliver these outputs. A priority list of stations has been developed reflecting DfT analysis of the benefits and costs of works.

It has been agreed with HM Treasury that the funding available through the Access for All fund of £374 million from 2005 until 2015 will be split:

- 80 per cent for capital funding to be logged up to the RAB; and
- 20 per cent to be funded directly by DfT.

Other

Chiltern Evergreen 2

The Evergreen 2 project was developed by Laing Rail, on behalf of M40 Trains, with the implementation managed by Carillion. The project is being funded and delivered under a 'design build finance and transfer' (DBFT) model. Under this model, Laing Rail appointed a Special Purpose Vehicle (SPV), controlled by a third party contractor, which is financing the development and implementation of the project. Network Rail will purchase the new assets on completion and assume responsibility for the operation, maintenance and renewal. Remuneration will be through an addition to the RAB and a corresponding increase in access charges. This project addresses infrastructure bottlenecks between Bicester North and London Marylebone with the objective of improving capacity and providing more robust train performance. The scheme's main components are:

- additional signals between Bicester and High Wycombe between Princes Risborough and Aylesbury, and around Neasden Junction;
- two additional platforms at Marylebone; and
- the removal of a speed restriction at Beaconsfield by alteration of the alignment of the track.

All physical works are programmed for completion in late 2006.

A list of schemes funded through the RAB are in Appendices 14 and 16.

Outperformance fund

As explained in our Business Plan we have ring-fenced £200 million which we propose to add to the existing £200 million Network Rail Discretionary Fund (NRDF) that was provided by Government. These additional funds could be used for larger schemes than the original NRDF, which imposes a scheme limit of £5 million. As with the NRDF, we will develop proposals for use of these funds in

discussion with train operators through our Route Investment Review Groups.

For the longer term we hope to be able to develop an indicative list of schemes with DfT and Transport Scotland as part of the periodic review process, and to refine continually this list as we develop RUSs and our annual Business Plans for Control Period 4.

Third party schemes

These are projects required and funded, either in part or fully, by customers and stakeholders (third parties). Enhancement projects are generally carried out by Network Rail (but occasionally by customers and stakeholders) and their costs are recovered from the customer on a reimbursable or fixed cost basis.

Small or medium customer projects are currently projected to amount to over £1 billion in the next three years, with over £150 million per annum being delivered by Network Rail. Large schemes vary but in Scotland alone there is an anticipated spend of over £1.6 billion in the next six years. Additionally, large infrastructure projects around London, such as Crossrail, East London Line, and work in support of London 2012 are currently under discussion.

Enhancement projects have the potential to import risk through interruption to railway operations, prejudice to safety, and the risk of project overspend and delay. Network Rail therefore has to balance enhancements against its operational business.

Many of Network Rail's primary relationships with customers and stakeholders are developed through enhancement projects. Because enhancements use Network Rail resources and are part of the railway's obligations to the broader community, they are subject to regulatory policy and strategic oversight, and therefore require the close involvement of the ORR, DfT, and Transport Scotland.

To reduce the barriers to investment and to make it easier for our customers and stakeholders to work with us in the future, the development and implementation of enhancement projects will be negotiated in the future using templated principal agreements, which have been approved by ORR. This important change provides for a choice of delivery route and simplified terms that are designed to be fair and equitable. It also provides for the use of alternate funding mechanisms including establishment of the industry risk funds and insurance top up arrangements.

We have created route enhancement teams to provide an organisation more focused on supporting our customers and stakeholders investment projects. This team will enable a better

understanding of customer requirements and expectations, and allow earlier involvement of Network Rail, which in turn will facilitate an improved investment decision making process.

The route enhancement managers will negotiate with customers on the basis of established policy, and using template agreements. The work will then be estimated and delivered by MP&I, with contractual advice provided by our enhancement contracts team.

We are investigating new opportunities for initiating, funding, monitoring, managing and delivering enhancement schemes by improvements to our processes, and investing in new systems to support the activities of our route enhancement teams. A list of third party schemes is in Appendices 15 and 16.

Transport Scotland schemes

Transport Scotland sponsors solely a number of schemes, while in others it takes a joint funding role with other interested stakeholders. The major schemes underway are summarised below.

Edinburgh Waverley redevelopment

This scheme involves the re-modelling of the west throat, construction of two new platforms at Klondyke and Balmoral, and the provision of escalators and lifts at the Waverley Steps, consistent with the requirements of the Disability Discrimination Act. Work commenced in January 2006 and completion is expected by December 2007.

The Stirling to Alloa re-opening

This scheme will provide a new station at Alloa and re-open approximately 13 miles of closed line between Stirling and Alloa to passenger traffic. The final designs are currently being completed.

Mossend to Elgin gauge enhancements

This scheme, initiated by the North East Scotland Freight Development group, will provide gauge clearance for a wider range of freight traffic on the route.

A list of schemes funded by Transport Scotland is at Appendix 16.

Welsh Assembly Government

The Welsh Assembly Government plans to spend around £7.5 million during 2006/07 on a variety of rail enhancement schemes within Wales. In excess of £30 million is currently budgeted for new rail schemes over the next five years.

Currently it is funding the development of a range of platform extension projects along the Treherbert and Rhymney Valley Lines, capacity enhancements between Pontypridd and Merthyr Tydfil and a capacity enhancement study on the Bridgend to Maesteg line.

Following the successful reopening of the Vale of Glamorgan line to passenger traffic in the summer of 2005, the Welsh Assembly Government is now funding major studies and works to reopen the 12 mile Ebbw Vale line to passenger traffic. Network Rail is undertaking asset protection services for this scheme.

A list of schemes, including those funded by the Welsh Assembly Government is at Appendix 15.

Other planned and committed schemes

East London Line extension

The overall purpose of this scheme is the provision of enhanced transport links between east and south London. It is being pursued as part of a wider programme of economic and social regeneration and is a critical scheme for London 2012. It will deliver a new connection into Network Rail infrastructure at New Cross Gate, track and signalling alterations at Crystal Palace and West Croydon, and station alterations at Crystal Palace, to enable new train services running under TfL specification.

TfL has commenced enabling works, and programme completion is anticipated by 2009, with service operation by 2010.

Stratford station

We are working with TfL to improve the passenger handling capability of Stratford station. Present plans include a new west-bound Central Line platform, widening platform 8, re-opening the eastern subway, ticketed access and egress from the station mezzanine to the town centre via the link bridge being built for the Stratford City development, decluttering platforms 3, 5, 6 and 8, and new staircases and lifts. Target completion is scheduled for 2010.

Conversion of North London Line to Docklands Light Rail operation

This project, being carried out in conjunction with TfL, will facilitate the conversion of the North London Line (NLL) south of Stratford to Dockland Light Rail (DLR) operation, and create three new DLR stations plus a new DLR station at Stratford International. The conversion to DLR is expected to be completed by early 2010, subject to the granting of a Transport and Works Act anticipated for autumn 2006.

Our main role is the provision of managerial support, technical advice, and approvals for replacement NLL terminating facilities at Stratford. There will be several other projects taking place simultaneously at the station and, therefore, some DLR works may be combined with these other projects.

Additional facilities at Stansted airport

The BAA Stansted Generation 2 project is planned to deliver an additional runway and expanded customer facilities at Stansted airport in order to accommodate the predicted growth in passenger numbers from 35 million per year today to around 75 million per year by 2030. To support this there is a need to develop surface access to the airport, including further rail facilities and provide capacity for additional services to operate. This need is further driven by the environmental limits that will inevitably be applied to the expansion of the airport. We are working with BAA to develop options to meet the requirement, in advance of further public consultation later this year.

It is likely that works to improve capacity will require TWA powers, although timescales for achieving this and commencing work are uncertain.

Additional facilities for Heathrow Terminal 5

The building of Terminal 5 at Heathrow will increase the demand on the existing rail infrastructure. This project will provide the changes to the signalling, electrification, and telecoms systems required to deliver an operational train service to Heathrow Terminal 5 by the planned opening date in March 2008. We will be responsible for managing the safety assurance of the signalling, telecoms and SCADA systems, through to taking the completed assets into use. Network Rail's responsibility for the assurance process is consistent with its role as infrastructure controller for the Heathrow Express.

The major milestones to be delivered by the project are the commissioning of Slough integrated electronic control centre by late summer 2006; commissioning of signalling systems by spring 2007; and acceptance testing by summer 2007. The present indicative costs are in the order of £20 million.

Provision of enhanced rail links into Heathrow airport

Following the completion of Terminal 5, the Government has proposed that continuing anticipated demand in the south-east for air travel is accommodated through further expansion at

Heathrow. Any expansion plans will require additional capacity for surface access to the airport and we are at a very early stage in exploring with BAA the options to enhance rail links to Heathrow. This is likely to involve the provision of new infrastructure between Staines and Heathrow. The timescales are yet to be developed but are likely to be beyond 2010.

Crossrail

Proposals for the construction of an east-west London rail link and the introduction of associated rail services are currently under development by Cross London Rail Links (CLRL), a joint Department for Transport and Transport for London company. The Crossrail scheme is designed to reduce overcrowding on the London Underground Central Line in addition to creating new journey opportunities and stimulating economic growth. Network Rail's input into Crossrail is now being set up as a discrete major project.

The Government completed its review of Crossrail in July 2004 and as a result, a bill was placed before parliament in February 2005. It is expected that the bill will complete its parliamentary process by summer 2007.

Outputs

Our projected operations, maintenance and renewals activity underpins our forecasts of the outputs we plan to deliver. These outputs are linked to our seven key objectives as shown in Figure 20.

Safety

Driving continued improvement in the safety of the railway through the appropriate and acceptable operation, maintenance and renewal of the system, and the safety of the workers, is a key goal. In our first three years we have seen steady improvement through focusing on key risks, with most of the key safety performance indicators at historically low levels. Regrettably, the past year saw a number of workforce and level crossing related fatalities, and these are two areas where improvement is a key objective. We will work hard so the railway

Figure 20 Outputs, objectives and measures

Outputs	Objectives	Measures
Improved safety	Reduced number of accidents	Public safety index
Higher service performance	Better punctuality and reliability	Public performance measure (PPM)
Increased system capability	Increased passenger and freight usage	Passenger and freight traffic measures
Improved relationships with customers	Increased passenger and freight operating company satisfaction	Passenger complaints per 100,000 journeys
Better financial control	Improved financial efficiency	Financial efficiency index
Better asset stewardship	Improved and better value stewardship of the infrastructure	Asset stewardship incentive index
Improved business performance	Greater employee engagement	Employee engagement measure

continues to be one of the safest forms of transport.

We are working with Rail Safety and Standards Board (RSSB) to develop a new safety risk measure which will be used in the Government's High Level Output Specifications. The current proposal is to use RSSB's industry risk model as a core component of the measure for safety outputs. In the meantime we will continue to use the industry-wide public safety index as the high level measure of our safety performance. We have been able to quantify the expected improvement in risk as a result of our own initiatives and are working with RSSB to develop a strategic planning process which will quantify projected improvements in the industry-wide risk profile. We have not, therefore, included a projection of the public safety index for future years in this plan. The high level measure is supported by a suite of other safety measures.

The Business Plan sets out, within the functional delivery plans, how Network Rail will continue its systematic improvement of control of key risks; compliance with new legislation; and work with industry partners to improve the health and safety delivery performance of the railway. The key actions to deliver these improvements are summarised below, grouped into the areas to be targeted:

- enablers to reduce wide range of system risk;
- workforce safety;
- train accidents; and
- other risk to passengers and the public.

Enablers to reduce system risk

We will continue to adopt a systematic and integrated approach to address a wide range of safety risks.

The most significant component of our strategy to improve safety is to embed health and safety decision-making more fully into the key delivery functions, consistent with their existing responsibility for safety management on a day-to-day basis.

We will also implement a comprehensive approach to improve safety critical communication through extending the successful pilot of training courses across the company and to key partners in the industry. This will be supplemented by the systematic use of voice recorders and mentoring techniques.

Workforce safety

Improvements to eliminate fatalities and to significantly reduce the accident frequency rate (AFR) are a key priority and will continue to be in the coming year. We have not yet met the stretching target we have set for a reduction in AFR, but very significant progress has been made and we will continue to strive to achieve a rate significantly lower than comparator industries.

Workforce safety improvement is led by the Network Rail executive team and the newly established project safety leadership group will extend this across our contractor base. This will provide the leadership drive, direction and commitment for a range of strategic improvement activity in 2006/07 including:

- a fundamental review of the planning, co-ordination and management of track possession arrangements; and
- a comprehensive study to understand the psychological aspects of front-line safety behaviours, led by our ergonomics team in conjunction with trade unions and leading academics.

Other key initiatives from 2005/06 which continue into 2006/07 are:

- a measurable reduction in accidents; this has been achieved through the launch of a new manual handling training programme. Over two-thirds of the maintenance workforce have been trained to date and by the end of 2006/07 over 18,000 maintenance and signalling staff will have completed the course;
- the upgrading of our track access points to reduce slips, trips and falls. In the coming year this initiative will be extended to provide new access points and improved lighting at key locations;
- the purchase of a number of lookout operated electronic warning systems (LOWS), which are currently undergoing pilot testing with a view to rolling out some 200 systems to our maintenance teams over the next two years;
- the simplification of possession arrangements;
- a supporting communications programme, Safety 365, providing targeted, consistent and phased communication of key safety messages.

Train accident risk

Train accident risk has been consistently reducing over a long period of time. The relative risk of potential causes of accidents is monitored using the industry wide precursor indicator model (PIM) and Figure 21 shows how this is changing.

Level crossings

Level crossings are the largest single source of train accident risk facing Britain's railways with around 90 per cent of fatalities related to car drivers and pedestrian users of crossings. The increase in risk continues to be driven by the level of road vehicle driver abuse and Network Rail will continue to work with the wider community to focus on changing attitudes and making abuse of level crossings by motorists as unacceptable as, for example, drink driving.

Our level crossing policy and strategy, aimed at significantly reducing level crossing risk, focuses on:

- launching a high-profile publicity campaign to highlight the risks at level crossings, and how they should be used safely;
- working with Government to review the legal framework for level crossings;
- developing complementary approaches to enforcement by working with local authorities and the police;
- investigating and developing novel and low cost engineering solutions, such as obstacle detectors; and
- closing level crossings and upgrading the type of protection where reasonably practicable to do so.

Irregular working

Since 2002/03, the total number of irregular working events reported has increased. We have undertaken work to seek to understand the extent to which this is related to an increase in the reporting of events which are generally low risk, such as wrong-routing of trains, and the extent to which it reflects an underlying risk increase. Key actions arising are:

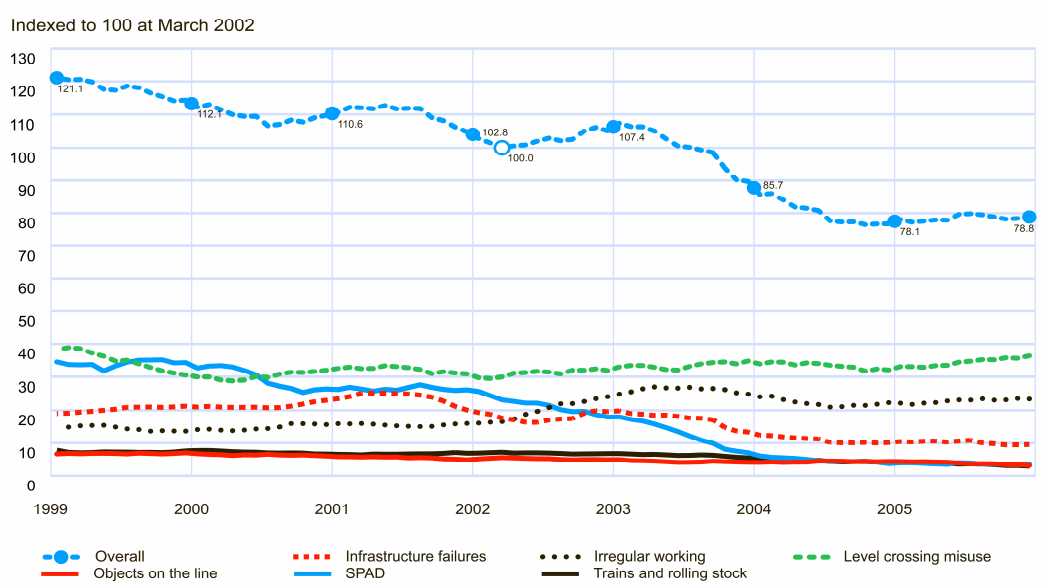
- further progressive increase in signaller competence utilising the recently completed state of the art training centres and electronic signaller assessment;
- streamlining signaller information systems, such as sectional appendix and electronic forms; and
- the data definition and collection on irregular events to enable further analysis and improvement.

Infrastructure failures

The reduction in broken rails and other condition improvements over the last three years has reduced the risk of infrastructure related train accidents. This will continue as the asset stewardship indicator improves, albeit at a lower rate of improvement.

Work is underway to improve the design substantiation of critical asset types, currently focusing on points. This will provide greater assurance that the generic designs of equipment are fit for purpose. Work is also continuing on investigating ways to implement better configuration management of our assets to improve safety and performance. This is estimated to reduce infrastructure failure risk by seven per cent by the end of 2010/11.

Figure 21 Train accident risk



Signals passed at danger

The risks arising from signals passed at danger (SPAD) have reduced significantly since the introduction of the train protection and warning system (TPWS) and completion of the extended protection version (TPWS+) in 2005 and the industry long-term target for SPAD risk has been met.

Further incremental initiatives for 2006/07 are:

- minor TPWS improvements including changes to buffer stop and speed restriction fitments; and
- improvement works at specific problem signals.

Other risks to passengers and the public

Trespass and vandalism

Whilst trespass and vandalism do contribute a minor element of train accident risk, the great majority of risk is to the safety of the individuals involved. We are particularly concerned to continue the reduction in the number of children and young people who trespass onto the railway. Key initiatives, aimed at reducing these risks, are:

- increase the scope and effectiveness of the No Messin' campaign introduced in 2005;
- pilot the use of visible security patrols and covert cameras at 'hotspots', particularly during school holidays; and
- selective use of security measures such as bridge caging and high-security fencing.

Security

Terrorism continues to be a significant risk and we are working in very close liaison with security forces, taking their advice on a range of measures both to deter an attack and to reduce the impact on individuals should it occur.

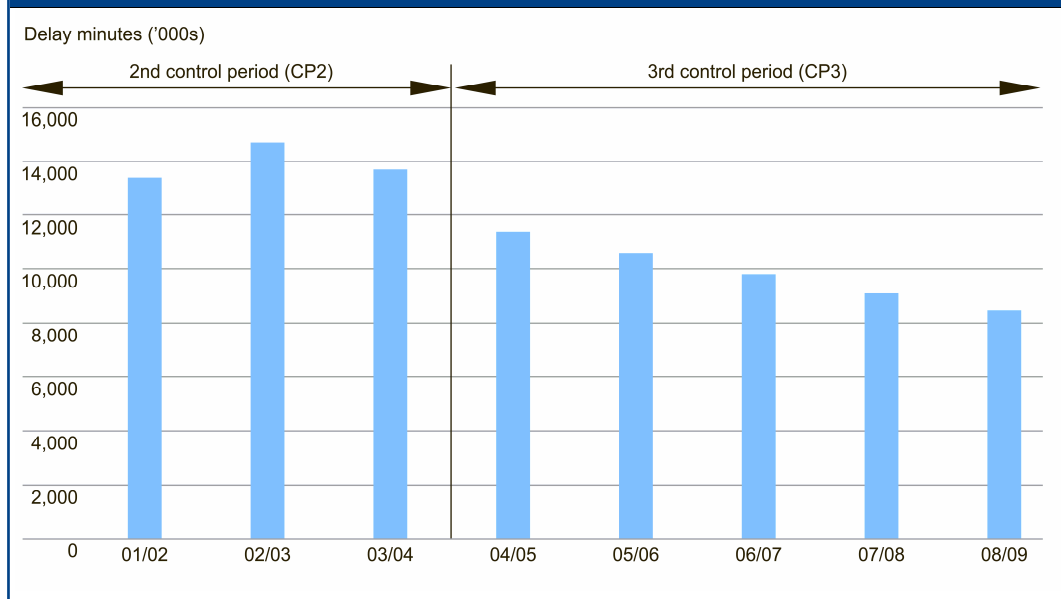
Performance

In the 2003 Access Charges Review we have been set a target to improve the reliability of the network by more than 30 per cent by 2008/09. Over the last two years, reliability has improved significantly and we are currently expecting total delays for 2005/06 to be between 10.5 and 10.6 million minutes. This is seven per cent better than last year and 23 per cent better than 2003/04. It is in line with the revised target we set ourselves last year, and ahead of the target of 11.3 million minutes set by ORR.

Given the continued improvement in Network Rail caused delay minutes, we are maintaining the delay minutes targets that we set ourselves in the 2005 Business Plan. This includes a target of 9.8 million minutes in 2006/07, which is better than ORR target by 800,000 minutes and achieves ORR target for 2007/08 a year early. Targets for the following two years are also unchanged, with a 2008/09 figure of 8.5 million minutes, which exceeds ORR target by 600,000 minutes.

Our performance plan for 2006/07 is based on 2005/06 actual results as a baseline, together with an assessment of the impact of detailed improvement plans developed by our route-based teams and nationally sponsored initiatives. The analysis also takes into account the effect of expected traffic changes, the potential impact of major events such as severe weather and other specific improvement plans.

Plans for the following two years include a mixture of specific projects and initiatives with long lead times, together with planning assumptions on the scale of improvement which can be delivered from process improvements and specific initiatives with shorter lead-times.

Figure 22 Planned improvement in delays caused by Network Rail

The planned improvement in Network Rail delays to passenger and freight trains is shown in Figure 22.

Our projections for PPM this year are derived from the Joint Performance Process with operators. These are based on the forecasts for Network Rail delay minutes by operator, combined with improvements in train operator performance provided by operators, and additional improvements arising out of joint initiatives. These include any planned initiatives which are expected to deliver particular improvements in small delays and punctuality over and above the impact through standard delay minutes measure. When combined with our current growth assumptions, the impact of these improvements on PPM punctuality by operator is assessed through statistical analysis. When aggregated across operators, the industry would reach 87.6 per cent PPM by March 2007, 88.3 per cent by March 2008 and 88.9 per cent in March 2009.

The 2006/07 contractual Local Output

Commitments have been based on the target included in the 2003 Access Charges Review reflecting our regulatory commitment. However, we are determined to deliver greater improvements for our customers and have reflected this in 'stretch' targets for each operator. These are used as the starting point for the Joint Performance Improvement Plan (JPIP) projections for PPM

described above.

There will inevitably be some uncertainty about the level of improvement we achieve given the complexity of train performance as a dynamic system and the impact of external weather conditions and events, which the experience of recent years has highlighted.

2006/07 performance forecast

In 2006/07, we are planning to make real improvements equivalent to a reduction in delays of around 1.0 million minutes. After allowing for the impact of planned traffic growth and increased congestion on the network, we expect to reduce total delays by around 750,000 minutes. This is shown in Figure 23, expressed as total delay minutes, delay minutes per 100 train km, and PPM to show the overall planned improvement in train service performance. The actions to deliver these improvements are referred to briefly below. Further details are contained in the relevant plan for each function.

The performance improvement strategy focuses on a combination of specific prioritised initiatives, targeted renewals, and a range of improvements to the overall effectiveness of the entire company. Wherever possible, this approach is carried through in collaboration with train operators to ensure that cross-industry opportunities are exploited. The key elements of our national

Figure 23 Performance forecast – total delay minutes, per 100 train km, and PPM

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09
Total Network Rail delay (million minutes)	13.7	11.4	10.6	9.8	9.1	8.5
Delay minutes per 100 train km (passenger)	2.66	2.18	1.94	1.77	1.63	1.53
Punctuality PPM %	81.1	83.6	86.3	87.6	88.3	88.9
Delay minutes per 100 train km (freight)	4.77	4.52	4.32	3.93	3.63	3.39

performance improvement programme can be summarised as follows:

- asset reliability improvements (track, signalling and other assets);
- delay per incident and other operational management improvements;
- mitigation of seasonal weather and external risks (such as crime, bridge strikes and fires);
- minimising other performance risks, such as those arising from renewals and major projects;
- improved timetable robustness and train planning; and
- cross-industry improvement initiatives.

In addition, a number of initiatives are being progressed to provide some fundamental improvements to the overall operating framework, including:

- improvements in asset knowledge and condition, together with enhanced management processes, to minimise the disruption caused by temporary and emergency speed restrictions on the network;
- delivering other improvements in asset condition monitoring and maintenance effectiveness exploiting the benefits of engineering innovation and investment, together with unlocking the benefits arising from the transfer of maintenance back to Network Rail;
- the continued focus on basic operating disciplines, including the attention to detail in all aspects of operational management and maintenance, and learning the lessons from the structured reviews carried out after all major incidents;
- further improvements in cross-industry co-operation, ranging from the continued roll-out of integrated control centres, the resilient timetables programme and the roll-out of improved train regulation rules, through to improved contingency and recovery plans to mitigate disruption following an incident;
- cross-industry improvement initiatives and joint improvement planning through the Joint Performance Process; and
- the development of improved performance monitoring systems and processes, using a structured set of functional metrics, together with better access to data and more robust analytical tools.

2007/08 to 2008/09 performance forecasts

Detailed planning is now commencing for years two and three of the planning horizon. The nature of improvements is expected to be broadly similar to the plan for 2006/07, with continuing significant improvements arising from improved asset reliability, and a range of national and local initiatives. Local initiatives and the benefits from maintenance works are scoped on shorter planning time horizons, and remain as planning assumptions for these later years at present. The

performance forecasts, delay caused by Network Rail to train operators, is set out in Figure 24. These represent the stretch (non-contractual) targets which correspond with the internal performance targets set for Network Rail routes. For most passenger operators this forms the base for Network Rail delivery within the JPIP process outlined above.

Capability

We are working closely with our customers and stakeholders to maintain and renew the infrastructure capability to a level consistent with our funding, and to keep accurate records of the capability of the network.

We are currently funded to maintain the network to the level of its capability in April 2001. In recent discussions with customers and funders, we have acknowledged that there have been a number of instances where there has been found to be a discrepancy between actual and published capability. We have classified the discrepancies into three categories, thereby defining the nature of action that is required. The first category represents routes where there is a strong business case for re-investment to raise the actual capability to the level that had previously been published. Seven such routes have been identified and are currently being considered through our investment process. The second category represents routes where we believe the published capability should be revised to reflect alignment with the actual capability. A number of these routes are in the process of network change. We are considering the remaining routes in conjunction with our customers to ensure that a change would be appropriate in the light of their estimates of future traffic potential. The third category concerns routes that are currently unused but have known traffic prospects. These routes will be considered in conjunction with our stakeholders and customers to understand the business case for bringing the routes back to published capability.

We have agreed with our stakeholders that our definitions of capability will comprise:

- track and route mileage;
- linespeed capability;
- gauge capability;
- route availability;
- electrified track capability;
- length limits;
- total tonnage capability; and
- gradient profile.

A workstream has been initiated to populate the definition. For those measures that are not new, the population is initially by reference to the published information.

A second, closely related workstream aims to verify the level of published capability. A dedicated

Figure 24 Network Rail delay and PPM by operator

Operator		2005/06 (see note)		2006/07		2007/08		2008/09	
		Network Rail delay minutes	Network Rail delay minutes per 100 train km	Network Rail delay minutes	Network Rail delay minutes per 100 train km	Network Rail delay minutes	Network Rail delay minutes per 100 train km	Network Rail delay minutes	Network Rail delay minutes per 100 train km
Transpennine Express	Delay minutes PPM	253,197	79.2	223,914	90.0	205,619	91.5	186,863	92.1
One	Delay minutes PPM	647,919	86.5	603,425	88.4	553,503	88.9	515,914	89.3
Northern	Delay minutes PPM	1,075,236	86.3	969,446	86.7	882,640	87.5	811,721	88.3
First ScotRail	Delay minutes PPM	642,566	85.2	585,925	87.3	537,406	88.7	500,849	90.0
GNER	Delay minutes PPM	213,595	82.3	200,631	83.6	170,732	85.5	154,638	87.7
Merseyrail Electrics 2002	Delay minutes PPM	83,990	92.5	69,184	94.1	67,000	94.4	63,419	94.6
Virgin West Coast Trains	Delay minutes PPM	511,197	82.1	485,780	85.5	454,795	87.8	428,158	88.6
Central Trains	Delay minutes PPM	783,192	77.6	718,986	83.8	681,970	84.5	639,564	84.5
Virgin Cross Country Trains	Delay minutes PPM	541,506	80.5	479,541	81.6	434,418	83.5	399,049	84.3
Midland Mainline	Delay minutes PPM	134,704	92.0	131,192	92.2	127,530	92.4	124,418	92.7
Arriva Trains Wales	Delay minutes PPM	392,658	80.7	372,213	84.2	345,709	85.1	320,646	85.8
Chiltern Railway	Delay minutes PPM	108,228	91.9	102,416	93.5	100,811	93.8	96,279	93.9
Silverlink Train Services	Delay minutes PPM	165,754	89.4	159,576	90.0	143,072	90.5	131,085	91.0
c2c Rail	Delay minutes PPM	49,148	92.8	48,230	93.0	46,993	93.2	43,777	93.5
South Eastern	Delay minutes PPM	535,214	85.4	491,716	86.7	461,438	87.2	441,810	87.6
Gatwick Express	Delay minutes PPM	29,202	90.1	26,548	90.6	25,738	91.0	24,671	91.3
Southern	Delay minutes PPM	529,138	86.9	505,424	88.0	476,283	88.8	453,639	89.4
South West Trains	Delay minutes PPM	542,175	89.4	507,276	90.3	470,721	90.5	442,617	90.6
First Great Western	Delay minutes PPM	876,287	82.6	771,914	83.9	700,827	85.0	650,382	85.9
First Capital Connect	Delay minutes PPM	312,794	87.4	302,703	87.7	292,199	88.2	280,020	88.5
Other Passenger Operators	Delay minutes	86,875	1.32	82,028	1.23	78,327	1.17	62,250	1.07
Passenger total	Delay minutes	8,514,565	1.94	7,838,067	1.77	7,257,728	1.63	6,771,768	1.53
Freightliner Heavyhaul	Delay minutes	249,795	5.30	231,752	4.72	227,122	4.59	209,579	4.24
Freightliner	Delay minutes	405,923	4.76	375,741	4.41	349,244	4.09	328,944	3.86
GB Railfreight	Delay minutes	49,189	4.44	47,644	4.30	46,291	4.15	43,536	3.91
English Welsh and Scottish Railway	Delay minutes	1,267,517	4.11	1,229,257	3.74	1,151,959	3.43	1,066,651	3.18
Direct Rail Services	Delay minutes	37,401	2.76	38,157	2.52	44,692	2.44	43,099	2.36
Freight total	Delay minutes	2,009,825	4.32	1,922,552	3.93	1,819,308	3.63	1,691,810	3.39
Other operators (including LUL, charter & other)	Delay minutes	41,174	1.34	39,381	1.28	37,964	1.23	36,422	1.19
GB network total	Delay minutes PPM	10,565,564 85.8	2.17	9,800,000 87.6	1.98	9,115,001 88.3	1.83	8,500,000 88.9	1.72

Note: 2005/06 PPM figures are moving annual average at January 2006. Delay minutes figures are year end assumptions at January 2006.

cross-functional project team has been formed to ensure that it is delivered throughout the company.

Customer and stakeholder relationships

We have maintained our projections for passenger complaints in line with the 2005 Business Plan. It should be recognised, however, that the relationship between the number of complaints and how well the industry is performing is not necessarily straightforward and is affected by a variety of factors and expectations. We are looking to develop additional measures of passengers' and other rail users' overall satisfaction.

Asset stewardship

Although our understanding of the relationships between activity and asset stewardship output measures has continued to improve over the last year, we are not yet at a stage where we can predict outputs with complete confidence. This is partly because these output measures are not solely driven by the absolute volume of maintenance and renewal activity. They are also affected by the quality of work carried out and the extent to which it is accurately targeted. Various external factors, the impacts of which are not

completely controllable, also contribute to the uncertainty. Weather is the most significant of these external factors. The development of the Infrastructure Cost Model will lead to a greater ability to model these relationships over the coming year and this will, in turn, inform development of the High Level Output Specification (HLOS) as part of PR08.

Following the improvement in the asset stewardship incentive index of around seven per cent seen in 2005/06, we are now forecasting to better the asset measure targets set by ORR for 2008/09 by around 22 per cent. This is as a result of improvements in each component of the index, as illustrated in Figure 25. We are achieving this increased level of asset performance through a number of initiatives across the whole asset portfolio. Levels of broken rails have continued to fall as the result of various initiatives over the last few years, particularly the increased focus on rail grinding. These improvements, along with an increase in track maintenance volumes delivered, are also expected to drive a further improvement in our track geometry and numbers of level 2 exceedances. We expect the benefits of these

Figure 25 Asset stewardship incentive index

	Weighting	2005/06		2008/09		ORR
		KPI	index	KPI	Index	target
Track geometry	20%	0.86	0.17	0.82	0.16	1.00
Broken rails	15%	320	0.16	280	0.14	300
Level 2 exceedences	15%	0.83	0.14	0.79	0.13	0.9
Signalling failures	20%	23,700	0.16	21,260	0.15	28,750
Points/track circuit failures	10%	17,400	0.09	14,867	0.08	19,360
Structures & earthworks TSRs	10%	60	0.06	66	0.07	100
Electrification failures	10%	65	0.05	70	0.05	133
ASII			0.83		0.78	1.00

Note: the index for each measure is based on the projected KPI and the weighting in line with ACR03.

initiatives to continue to increase through to the end of 2008/09.

We have an ongoing prioritisation exercise to target those areas that have the highest risk of the application of a speed restriction due to earthworks or structures failure, and are concentrating our efforts in these areas. In particular, we are focussing our efforts on managing the known risks in our London North Eastern and Western territories in relation to long-standing earthworks TSRs. We have also made a provision for an additional 120km per annum of plain line renewals to be delivered by Maintenance to target reduced levels of track-related TSRs.

We are continuing to drive through a programme of OLE campaign changes (selected component renewals) as a primary means of managing the number of electrification failures on the network. The introduction of new measurement vehicles including Ultrasonic Test Units, the New Measurement Trains and the introduction of third rail monitoring on the Southern Measurement Train is expected to play a significant part in the early identification of defects and prevention of asset failures. Power supply issues are also being addressed through the high voltage switchgear replacement programme.

Signalling failures are being addressed through the use of carefully targeted improvements, based on Six Sigma project analysis. Over the last year we have carried out specific projects addressing points and track circuits as well as smaller initiatives on level crossings, ground signals, and lightning protection. We have also continued to roll-out skills and competence training throughout our maintenance operations to underpin our ability to prevent failures occurring and minimise the impact when they do occur.

Financial control

The financial efficiency index (FEI) is a measure of how efficiently we spend on operations, maintenance and track renewals. Maintenance is normalised to take into account factors such as traffic speed and volume, and track renewals are

normalised to take into account volumes delivered. As efficiency improves, we should be spending less to deliver the same outputs and therefore our FEI score which reflects total expenditure should reduce.

The forecast FEI for 2005/2006 is 1,977 – a fall of 167 (eight per cent) from the level achieved in 2004/05 – as a result of the delivery of efficiencies combined with tight financial control.

We have achieved a reduction in operations and other management expenditure through tight financial control, in particular the conversion of agency staff and a reduction in the use of consultants and contractors. In addition, we have reduced maintenance expenditure as a result of the in-sourcing of direct maintenance, which has eliminated profits and overheads as well as producing other delivery efficiencies, despite the increase in equated track miles.

The FEI is forecast to improve in 2006/07 to 1,877 (a five per cent reduction on 2005/06) as efficiencies continue to be delivered in all areas.

Traffic levels

We are currently assuming that, in the period to 2008/09, there will be growth in the number of passenger train miles of around one per cent and freight tonne miles of around 14 per cent. This is based primarily on known changes and partly reflects the level of congestion on the network. Greater passenger growth is expected to be achieved through train lengthening and improved utilisation. In addition, the actual level of growth will clearly depend on market conditions and other factors, such as the impact of our retimetabling work where further opportunities may be realised.

Scotland

Introduction

The 2004 Future of Rail White Paper and the subsequent 2005 Railways Act resulted in greater responsibility for railways in Scotland being devolved to Scottish Ministers. Specific new responsibilities were the management, monitoring and future re-letting of the franchise for internal

Scottish rail services and the power to take long term, strategic decisions about future investment. Responsibility for directly funding the ScotRail franchise subsidy and the Scotland element of the annual network grant to Network Rail were also transferred. Rail safety issues remain reserved to the UK central government.

Transport Scotland

The Scottish Executive set out their transport objectives in the 2004 Transport White Paper. Its primary objectives were to promote economic growth, social inclusion, health and protection of the environment through a safe, integrated, effective and efficient transport system. By the end of 2006, funding on public transport in Scotland is planned to reach £1 billion per year. A significant proportion of this is allocated to the seven major capital rail projects listed below. Network Rail is playing a key role in either delivering these directly or working in partnership with the promoter's agents.

- Larkhall to Milngavie reopening;
- Stirling / Alloa / Kincardine reopening;
- Edinburgh Waverley station redevelopment phase 1;
- Airdrie to Bathgate reopening;
- Edinburgh Airport Rail Link (EARL);
- Glasgow Airport Rail Link (GARL);
- Waverley Railway part reopening.

Transport Scotland, the new national transport agency for Scotland, has been created as an agency within the Scottish Executive. Its principal roles are to exercise the additional rail powers outlined above, to deliver the above major projects and to build a centre of transport excellence.

Network Rail in Scotland

Network Rail has responded to these changes in the role of its major stakeholder in Scotland by creating the new post of Director Scotland. This role takes an overview of all Network Rail's activities and is its face in Scotland. This entails working closely with Transport Scotland to address these devolved issues and ensure that Network Rail plays its part in helping to deliver their key objectives.

For Control Period 4 Transport Scotland has to produce a Statement of Available Funds (SoFA) and a High Level Output Specification (HLOS) for the rail network in Scotland in a similar manner to the equivalent documents being prepared by DfT for England and Wales. We are also currently discussing the associated details with ORR and Transport Scotland.

Network Rail looks forward to continuing our constructive working relationship with Transport Scotland and ensuring that we play our part in realising their exciting plans for the development of the rail network in Scotland.

Outputs

Network Rail's outputs and expenditure will be monitored separately for Scotland and England and Wales for the balance of the current Control Period until March 2009. This process has now commenced and we are currently discussing with ORR and Transport Scotland how the associated reporting arrangements can be further improved.

Income, expenditure and activities

The operations, maintenance and renewals expenditure we plan to make in Scotland and income we will receive from operations in Scotland is detailed in the Business Plan document.

Enhancements

Further details of the enhancements to be delivered in Scotland are explained in the enhancements section and appendices of this document.

Financing

Our net debt is expected to be approximately £18.1 billion at 31 March 2006. It is forecast to increase to £18.7 billion by March 2007 and over £19 billion in 2008/09. This is less than was assumed at the ACR03 mainly because of reduced opening debt, lower interest rates, reduced enhancement expenditure and reprofiled renewals within the control period. We have agreed to pay a fee to DfT to reflect the financial benefit to us in terms of lower interest rates from the financial indemnity mechanism (FIM) provided by Government.

We expect to raise approximately £3-5 billion per annum over the next three years, through a combination of public and private bonds issued under the debt issuance programme, to cover the refinancing of existing debt as well as funding working capital. It is currently expected that this will be the cheapest form of finance available to Network Rail and that there will be sufficient market capacity for this level of funding.

Existing borrowings and facilities

A summary of existing facilities can be seen in Figure 26.

Figure 26 Summary of existing debt

Facility (£ billion)	Year ending March 06
Debt Issuance Programme	
Eurobonds	8.1
New CP programme	3.1
EIB	0.8
KfW	0.2
MTN Programme	5.7
Other	0.2
Total	18.1

Debt issuance programme (DIP)

The DIP is Network Rail's main vehicle for raising finance. The DIP is structured as a platform for multiple types of debt issuance, including loan facilities, Eurobonds and Commercial Paper. The DIP was launched in November 2004 and to date £8.1 billion of Eurobonds have been issued. The note programme size is £20 billion. The £2.75 billion working capital facility is part of the DIP. Notes and other debt issued under the DIP are issued by an orphan special purpose financing vehicle (Network Rail Infrastructure Finance PLC) and proceeds are lent on to Network Rail Infrastructure Limited via an inter-company agreement.

The DIP is rated AAA/Aaa/AAA by Fitch, Moodys Investor Services and Standard and Poor's. The credit strength of the programme derives from support from the Secretary of State for Transport. Note holders and other indemnified creditors of the DIP benefit directly from a financial indemnity from the Secretary of State for Transport.

The financial indemnity is an unconditional and irrevocable obligation of the Secretary of State for Transport to make payments to the DIP security trustee to cover all debt service shortfalls. The financial indemnity is also designed to ensure timely payment as well as ultimate recourse to the Secretary of State for Transport. The financial indemnity matures in 2052.

Medium term note programme

Network Rail has £5.7 billion equivalent of Eurobonds outstanding as at 31 March 2006. All of the bonds are due to mature before 31 March 2009. No further debt will be issued from this platform and it is intended to use proceeds from DIP issuance to re-finance MTN debt as it matures. If debt issued under the MTN programme cannot be refinanced from debt issued under the DIP, or it is terminated early in a default scenario, then a Secretary of State for Transport support facility (the medium term note support facility) can be drawn in order to repay MTN note holders and hedge counterparties.

Commercial paper programme

There is a £4.0 billion Euro and US Dollar commercial paper programme under the DIP which has ratings of F1+ from Fitch, P-1 from Moodys Investors Services and A-1+ from Standard and Poor's. This CP programme was launched on 3 October 2005, and the credit strength of the programme is derived from the Financial Indemnity from the Secretary of State for Transport. The programme also has a £750 million dedicated commercial liquidity facility.

Working capital facility

There is a £2.75 billion working capital facility issued under the DIP (which benefits from the financial indemnity from the Secretary of State for

Transport). This is intended to act as a standby facility and to provide short-term liquidity to Network Rail.

EIB/KfW facilities

Network Rail has £800 million of term loans provided by the European Investment Bank (EIB), which have bullet maturity dates between 2007 and 2013 and £228 million of 364 day facilities provided by Kreditanstalt Fur Wiederaufbau (KfW) which matures on 1 June 2006. Both these facilities have been renegotiated and now sit under the DIP with the benefit of the financial indemnity.

Lease facilities

Network Rail has outstanding at 31 March 2006 £348 million of finance leases and they have final maturities of 2015 to 2020. These leases were renegotiated in 31 March 2005 to sit under the DIP with the benefit of the financial indemnity.

Other facilities

Network Rail Infrastructure Limited has a £25 million overdraft facility and an uncommitted money market facility of £25 million. Network Rail also has foreign exchange facilities with its relationship banks.

Secretary of State for Transport standby facilities

In addition to the facilities described above, Network Rail Infrastructure Limited has access to a standby loan from the Secretary of State for Transport through Tranche A of the Network Rail Infrastructure Facility. The total facility is for £4 billion, is available until 2052. This facility will only be drawn if all other sources of liquidity are exhausted.

Liquidity management and hedging policies

The working capital facility provides approximately 12 months of liquidity to Network Rail Infrastructure Limited in the event of prolonged capital market closure. Network Rail has a Board approved hedging policy. The key points are that all foreign currency exposures greater than £250,000 are hedged. This includes all debt not denominated in sterling. Exposure to changes in interest rate movements are managed by an interest rate management policy