Further Review of Network Rail's Capability to Deliver the CP4 Capital Programme

Final Report

11 March 2009

The Nichols Group 2 Savile Row London W1S 3PA Tel : 020 7292 7000 Fax : 020 7292 5200

email : info@nicholsgroup.co.uk www.nicholsgroup.co.uk

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Contents

1. Executive summary

This report gives the results of our review of Network Rail's capability to deliver its CP4 Capital Programme, conducted on behalf of the Office of Rail Regulation (ORR).

When ORR published its Draft Determination in June 2008 it said that it required Network Rail to:

- undertake the development of an overall capability development programme
- provide progress reports on enhancement project development milestones for ORR to monitor.

ORR has requested this review in order to assess progress in meeting these requirements; to review Network Rail's capability to deliver the proposed first year (2009-10) enhancement outputs, and to ascertain the extent to which Network Rail's development of capability is aligned with the requirements of the CP4 Delivery Plan.

Our approach

This study, conducted over a two month period, has involved consulting selected Train Operators, funders and suppliers, studying some 170 documents received from Network Rail and meeting with them on a number of occasions to discuss their progress and plans. We are pleased that this review has received the attention of four senior members of the Infrastructure Investment team, together with senior managers from Customer Services and Planning and Regulation.

We have considered the progress which has been made in developing various aspects of capability, as well as the overall integration of this development, comparing this with external good practice. We have also explored the progress which has been made in developing project milestone monitoring and the plans prepared for delivering enhancement projects in 2009/10.

During the period of our study, Network Rail has published draft material in relation to its CP4 Delivery Plan, and we have reviewed the elements relating to enhancement projects and outputs, to determine whether the capability development is aligned with these plans.

Overall capability development

We find that Network Rail has made considerable progress in a number of areas, but have not established an overall capability development programme in line with good practice, and as required by ORR. The overall strategy for capability development is not defined, targets are in some cases unclear and the numerous initiatives are not as joined up as they could be to maximise impact.

Internal resources, skills and process

Network Rail is progressing a number of new recruitment and training initiatives which are likely to yield medium term results. In the last three months NR has adjusted its internal resource forecasts upwards by around 10% for CP4. Although there remain shortfalls to recruitment targets, with actions planned and in the current climate we believe this should improve, and so we do not regard this as a significant risk to overall delivery.

Processes have been improved in a number of areas, with many smaller projects now subject to fast-track development, although this has not yet led to faster delivery. The Improving Project Delivery initiative should also lead to more robust planning and management of work in possessions, although this is relatively untested. A number of other process improvements are also in hand which should help to simplify and drive consistent application of GRIP.

External resources

The development of an overall supply chain engagement model and measurement framework and the improvements in critical resource management are of particular note. Suppliers have however reported a marked drop in confidence in the last quarter. This progress therefore needs to be sustained, in particular through sharing critical resource forecast and tender information proactively with suppliers and adhering to tender schedules.

Culture

Network Rail has recruited sponsor resources over the past 18 months and these are being developed with a significant internal training programme, directed through the application of competency reviews. Despite this investment in leadership and sponsorship training, train operators tell us that this has still not translated into more effective sponsorship, decision making and delivery on the ground, suggesting deeper cultural issues. We recommend that increased emphasis is placed on promoting and training behavioural aspects, and encouraging openness with customers.

Project development progress monitoring

The availability of development milestone progress information in relation to the CP4 enhancements over the latter half of 2008 has been variable and therefore not at a consistent or frequent enough level to meet the needs of funders, customers and ORR. In our review we have seen data which could meet this need for most projects. It is also being prepared for the CP4 Delivery Plan. Although Network Rail has continued to monitor enhancement project progress internally and has plans to refine its approach in this area, we feel that more value can be generated by being more consistent, consolidating this information and making it available to customers and funders.

Delivery Plans for 2009/10

Within the limitations of this review, we have found that, whilst the larger projects appear to be in good shape to deliver on their plans, a number of the smaller projects appear not to have progressed as rapidly as envisaged. A reduced level of activity is therefore anticipated in 2009/10 compared with that previously planned. The scale of development activity in relation to the HLOS portfolio, required in 2009/10, is considerable compared with recent progress, and we suggest that this will require careful monitoring to ensure that adequate progress is maintained. In some cases these projects have been re-scheduled to later in the control period, which will have assisted in managing down the previous early peak, but risks the generation of a delivery bow wave. Network Rail is in the process of reviewing the impact of this upon its resource forecasts, and we would expect this to be clarified in the final Delivery Plan.

Recommendations

We make the following recommendations for Network Rail action:

Overall Capability Development

1. Define in the CP4 Delivery Plan a capability development strategy and master roadmap, with clear targets.

2. Implement the capability development programme in an integrated manner, identifying and proactively managing the key interdependencies.

3. Clarify the accountability for, and leadership of, capability development.

4. Broaden the existing capability maturity model to embrace programme management.

5. Focus on developing behavioural as well as knowledge based competencies in both sponsorship and project management.

Project Development Progress Monitoring

6. Implement project development milestone monitoring, with at least quarterly reporting, to meet the reasonable requirements of customers and funders, from the start of CP4.

7. Consult the affected TOCs and FOCs consistently and formally on the GRIP stage 3 and GRIP stage 4 outputs for HLOS projects as these are developed.

Supply Chain Engagement and Critical Resource Management

8. Refine and embed the critical resource management process to ensure that this is fully effective from the start of CP4.

9. Ensure that demand forecasts for all critical resources flow from a single master capital plan, which is subject to robust change control.

10. Broaden the sharing of critical resource planning information with the supply chain to cover all areas of scarce resource.

11. Ensure that tender schedules are proactively shared and frequently updated, consistently across all supply categories. Ensure that the tenders are then delivered to planned timescales.

Rolling Stock Strategy

12. Define more explicitly the service plan and rolling stock assumptions for each project within the CP4 Delivery Plan.

We acknowledge the substantial amount of capability development activity which Network Rail is undertaking, and also the considerable effort going into the development of enhancement projects. The actions which we have identified need not entail substantial additional effort, but will ensure that the resources currently deployed have maximum impact. This will help to provide increased confidence of the delivery of the CP4 capital programme to ORR and the industry. These actions will also help to provide a greater degree of clarity to customers and funders of what will be delivered and when.

2. Introduction

2.1 Background to study

Network Rail's initial plans for Control Period 4 (CP4) were published in its 2007 Strategic Business Plan, and subsequently updated in April 2008. The Office of Rail Regulation (ORR) has subsequently published its Determination of Network Rail's Outputs and Funding for CP4 in October 2008. Network Rail has accepted the Determination and is now in the process of finalising its Delivery Plan for CP4 in response to the Determination. It published elements of this in December 2008 as part of the process of consulting its customers, and will publish a final plan in March 2009.

The Nichols Group undertook a short review of Network Rail's capability to deliver the Capital Programme in April 2008[i] and made recommendations to ORR. These recommendations were considered in ORR's PR08 Draft Determinations[ii] published in June 2008. ORR said that it required Network Rail to follow up two of the Nichols recommendations:

- development of an overall capability development programme
- progress reports on enhancement project development milestones for ORR to monitor.

In ORRs final determination published on 30 October[iii] it noted doubts about Network Rail's progress. ORR also noted that it had asked Network Rail to provide further information, particularly on 2009-10 plans, to address some of ORR's concerns. Although information on both recommendations and 2009-10 plans was eventually provided, it was incomplete and in certain areas did not appear to be robust.

2.2 Terms of reference

As a result of the above process, ORR has decided to commission Nichols to undertake a further review of Network Rail's capability to deliver its CP4 Capital Programme. The terms of reference (ToR) for this review are included in Annex A.

This is our final report addressing all of the objectives in the ToR.

2.3 Our team

Nichols has employed a small team of experienced consultants to conduct this review:

- Paul Wiseman
- Annabelle Osgood

- Peter Hansford.

2.4 Acknowledgements

We would like to acknowledge the constructive engagement that we have enjoyed from Network Rail in undertaking the study to date.

We have also benefited from consultation with a number of other parties involved in the development and delivery of the capital programme, including funders, train operators and supplier representatives, as listed in Annex B, and would like to thank them for their participation.

3. Approach

In conducting this study we have met with Network Rail and a number of other relevant stakeholders; we have sourced various information from Network Rail relating to their plans and progress with initiatives and projects, and we have analysed the information supplied.

A list of the interviews we have held and people whom we have consulted is included at Annex B.

We have identified various criteria, based upon external references and benchmarks (as described in section 5 of this report) which we believe are relevant to Network Rail demonstrating its development of capability, and have sought evidence from Network Rail and others in relation to these. We have sourced a variety of information, as previously supplied by Network Rail to ORR, and as provided directly by Network Rail, together with certain other public domain information, as referenced throughout this report and summarised in Annex D.

We have received some 170 documents from Network Rail relating to the study. Although time has been limited, we have met with Network Rail representatives on eleven occasions in order to ensure that we understood the plans and initiatives being progressed, and in an effort to clarify our understanding of the information supplied.

We have also received consultation drafts of the CP4 Delivery Plan: Enhancements Programme Statement of Outputs and Milestones[iv], which have provided an update on the plans for delivering enhancement outputs, and will therefore clarify the expected project delivery plans. We refer to this below as the "draft CP4 Delivery Plan" for convenience, although we understand that the final Delivery Plan will contain a number of other elements.

We subsequently requested an update from Network Rail of its current overall capital investment forecasts and its views on critical resource planning. However, we have only received limited information in response to this request, as we understand that Network Rail is still in the process of finalising its plans for CP4 and assessing the resourcing impacts. Based upon the information we have obtained, we have sought to assess the consistency of the capability development plans with the draft CP4 Delivery Plan.

Our findings and the key elements of analysis are described in sections 4 to 8 and summarised in section 9 below. We have used **bold text** in a number of places to identify suggested actions which we believe would improve the effectiveness of the existing capability development programme and project development reporting. In Section 10 we list a number of key recommendations which we believe would all contribute to increasing the assurance to Network Rail and ORR of the deliverability of the CP4 Capital Programme.

4. Network Rail's CP4 Capital Programme

Network Rail's capital programme for CP4 is necessarily ambitious in responding to the output targets set by its funders. The programme scope may be subdivided into three main elements:

- Renewals
- Enhancements funded through the Determination
- Enhancements funded from other sources, for example Crossrail, and other third party funders.

The funding split against these three sources is shown in Figure 1 below.

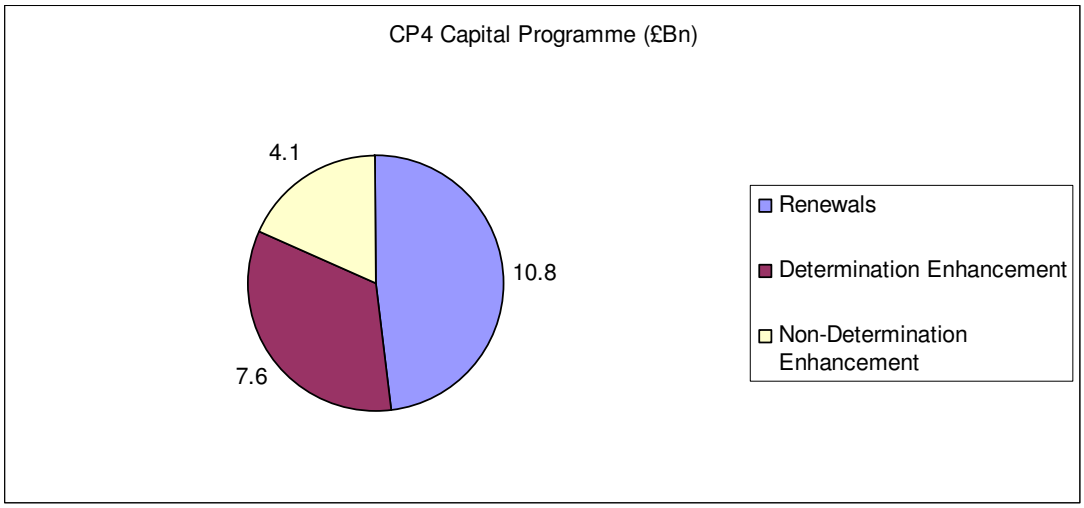

Figure 1: CP4 capital programme split by main funding source (06/7 prices)

Network Rail has now accepted the ORR Determination, although it had not done so at the time that we conducted our review. For the purposes of publishing the draft consultation elements of the Delivery Plans, Network Rail had assumed that the outputs and funding would be as specified in the Determination. We therefore also made the assumption in producing this report that the outputs, funding and therefore overall activity levels would be as set out in the Determination.

The CP4 renewals programme is broadly at an activity level comparable to the renewals activity undertaken in CP3, as illustrated in Figure 2 below. The CP4 data below is taken from the ORR Determination before application of efficiency targets, and as such represents broadly equivalent levels of activity. Network Rail does not anticipate any exceptional delivery challenges associated with delivering this quantum of renewals. Signalling and Operational Property do increase significantly but even here the average levels are not much in excess of the maximum volumes

achieved in CP3. However, the need to deliver simultaneous efficiency, and to reduce the levels of track access disruption associated with this work, inevitably do pose a number of challenges.

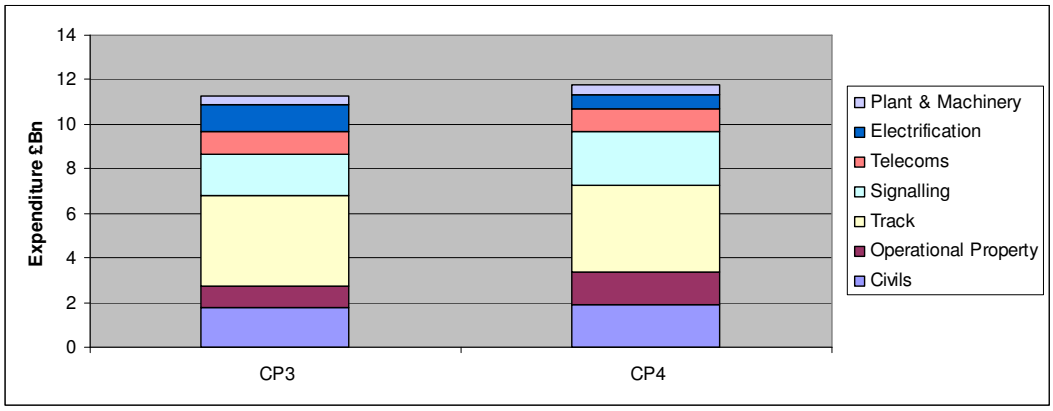

Figure 2: CP4 Renewals expenditure by asset, compared with CP3
(06/7 prices; note that the CP4 values are pre-efficiency, allowing a comparison of activity volumes)

We understand that Network Rail is in the process of re-profiling its planned delivery of renewals investment compared with that originally proposed in the SBP, as part of developing its CP4 Delivery Plan. This is likely to result in a deferral of approximately 10% of the renewals activity back from 2009/10 into later years. This is apparently motivated by a desire to maximise the opportunity for efficiency. The reduced volume of renewal activity will also help to ease the delivery pressures on the early part of the control period where enhancement activity greatly ramps up.

By contrast with renewals, the levels of enhancement activity are set to increase markedly in CP4 (circa £11.6 bn) compared with CP3 (circa £4 bn). In CP3 there have been two major projects (West Coast and Southern Power) and a relatively modest level of other smaller enhancements delivered. In CP4 there will simultaneously be a larger number of major projects, and an overall level of enhancement activity almost treble that typically delivered within CP3.

The Enhancement programme comprises a number of major projects and programmes which will be delivered by dedicated major project teams (40%), as well as a large number of generally smaller enhancement projects delivered through the Infrastructure Investments Enhancements (IIE) programme (44%), as illustrated in Figure 3 overleaf. The remainder (16%) will be delivered primarily through the Renewals organisation, which is also part of the Infrastructure Investment Group (IIG). Note that this figure which is reproduced from Network Rail's period 8 Monthly Business Review (MBR) pack[v] is presented at cash prices, so figures may differ from those presented elsewhere in this document.

Figure 3 illustrates that the delivery challenge is significantly increased by some £4.9bn of enhancement over and above that funded through the Determination. This includes £1.5bn of works for Crossrail, Transport Innovation Fund freight enhancements, as well as customer and third party funded and Network Rail discretionary investment. It must be recognised that this is not all currently committed, although many of the larger projects are well developed, and therefore likely

to progress. There are currently some 430 separate third party projects recognised in CP4, and one challenge for Network Rail is to determine which of these are ultimately likely to secure funding.

The figure also illustrates that the great majority of this capital programme will be delivered through the Infrastructure Investment Group within Network Rail. Our investigation of capability development described in section 5 below has therefore focussed on this part of the organisation.

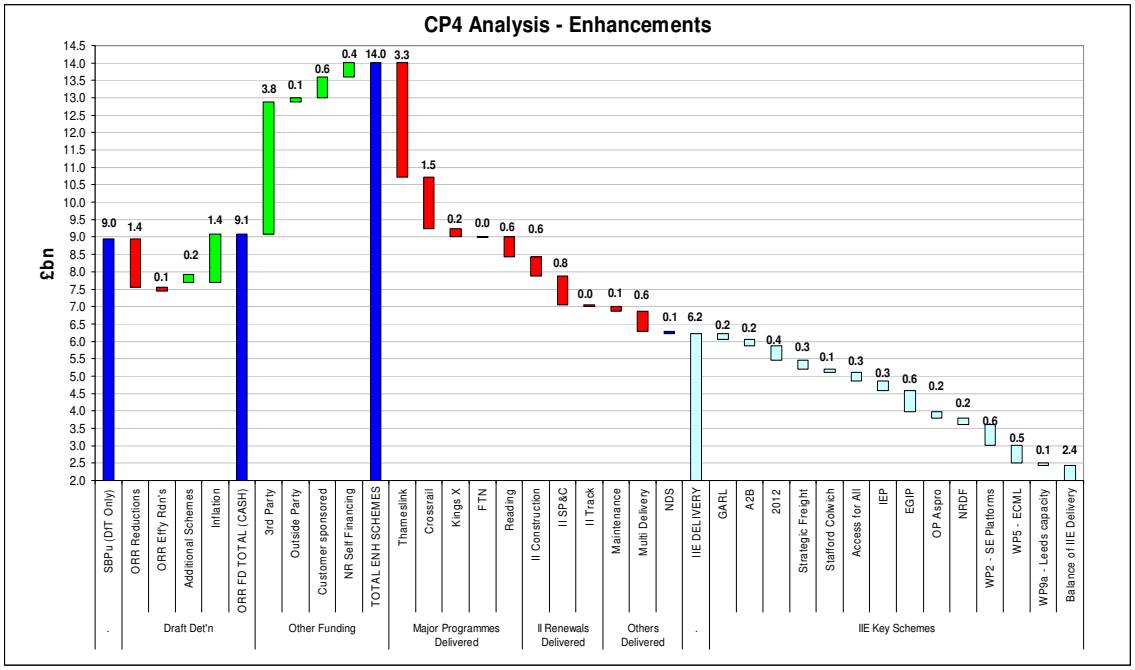

Figure 3: CP4 Enhancement expenditure split by funding source and delivery programme/organisation (cash prices, inflated)

5. Network Rail's Capability Development Programme

In this section we examine the progress which Network Rail has made in developing the capability to deliver its CP4 capital programme.

In our April 2008 report we defined capability as the ability to achieve specified objectives within actual constraints. This included the following key elements which we consider in turn below:

- Internal resourcing and skills
- Organisation
- Process
- External resources
- External dependencies.

We have also considered to what extent the various developments which Network Rail is progressing represent an effective overall capability development programme, reviewing some other organisations' capability programmes to inform our conclusions thereof. Before examining Network Rail's progress, we summarise these other comparators below.

5.1 External capability programme comparators

Two particular capability programmes have been reviewed for benchmarking purposes: the Health Service Executive (HSE) Ireland, and the HM Revenue and Customs (HMR&C) Transformation Programmes. These case studies[vi] were selected based on their relevance to the Network Rail undertaking.

The HSE embarked upon a Transformation Programme spanning 2007-10 whereby 13 transformation programmes will deliver their six transformation priorities. The Programme was initiated primarily by the need to address existing fragmented and disjointed services, to increase the use of appropriate performance measurement as a basis for managing and improving delivery, and to ensure staff engagement through optimised systems and processes.

The HMR&C forecast an expenditure of £2.7bn between 2006-11 in a quest to provide a more efficient and customer focused organisation improving accessibility for and monitoring of customer services. The HMR&C has forecast benefits of £11.5bn by 2011 with the target operating model effectively implemented by 2017.

Both the HSE and HMR&C highlighted the need to first establish the purpose of the capability programmes, such that as momentum is gathered the catalyst for undertaking such endeavours is clear and maintains relevance.

Having established its improvement focus the HSE framed six transformation priorities clearly mapping out where it is "today", clarifying the six priorities and identifying where it wants to be by the end of the programme. This created a powerful statement and aide memoir for the programme leaders and stakeholders alike.

Both programmes emphasised the importance of specific objectives, measures, milestones and accountabilities, in particular highlighting the need for strong leadership. The HMR&C recommended the establishment of a single department to manage the programme, developing detailed plans for the capability development initiatives and prioritising them taking into account key interdependencies.

Finally, both the HSE and HMR&C acknowledged the need for ongoing stakeholder consultation. Primarily to ensure the capability initiatives are appropriate and relevant, but just as importantly to ensure commitment to the programme and determining whether progress is being made in the right direction.

All of these approaches are applicable to Network Rail and we will consider these issues further below, particularly in section 5.2.3.

5.2 Internal resources and skills

Network Rail's investment into its people resources has increased significantly over the last financial year with a more targeted and forward looking approach. A number of new initiatives have been embarked upon which are likely to yield promising results for the future. It is important however that existing initiatives such as the Capability Maturity Modelling should not be neglected however, but instead built upon and integrated with the newer initiatives promoting a consistent and holistic approach to resourcing. Furthermore, it is important that a culture that embraces people-related change, in particular through leadership skills, should be encouraged.

5.2.1 Network Rail Resource Plans

5.2.1.1 Vacancies

We requested an overall view of resource planning and a copy of the CP4 Delivery Assessment was provided. Figure 4 below outlines a forecast for staffing levels required across Control Period 4 including the current year.

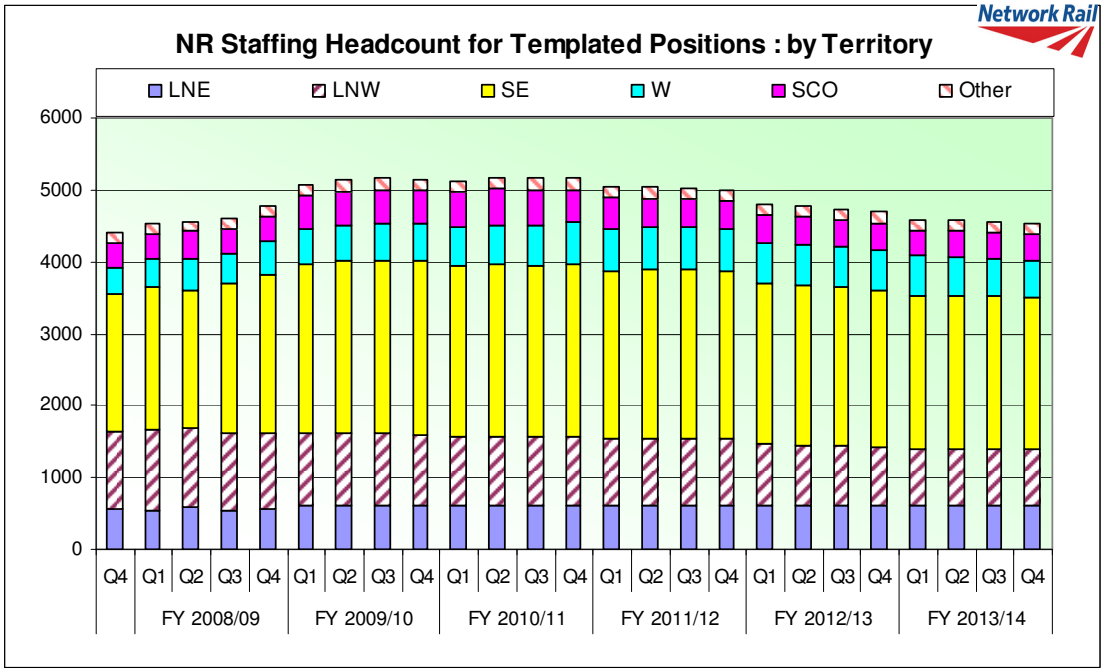

Figure 4: CP4 Infrastructure Investment Headcount Forecast

The peak requirement of 5,164 is shown in Q1 of FY2010/11 against the current manning level including agency staff of 4,774. The staffing requirement is developed bottom-up from inputs from each asset and major project group and clearly demonstrates a growth largely in the South East territory.

A list of current vacancies within Infrastructure Investment was also requested, and a 'snapshot' of approved job vacancies was received. The snapshot detailed 604 vacancies. 22% of these are within the Infrastructure Investment Enhancements area. 15% of the IIE vacancies are Commercial, 18% are in Engineering, 3% are in Professional Services and the remaining 42% are in Project Delivery. Separately we have been provided with the Period 8 IIE MBR pack which states an aspiration to recruit a further 100 staff by the end of 2008/9 and a further 170 over the following year.

In isolation these figures seem achievable; however, it is important to take into consideration competing demands for the same resources both within Network Rail and externally. Network Rail's resource demand is at its greatest in the South East, this is echoed by demand from other major infrastructure projects in the South: East London Line, the Olympics, Thames Gateway, M25 Road Widening, BAA airport expansion at Heathrow and Stansted, LUL PPP, etc.

We recognise that any organisation will expect to have some level of vacancy gap. In this case the vacancy gap of circa 12% is substantially mitigated by the employment of agency staff as detailed in section 5.2.1.3 below. We also recognise that should Network Rail seek to close this gap more rapidly it would have an adverse efficiency impact. It has advised us that it expects to balance the

pace of recruitment to match longer term demand trends and to concentrate on the quality of its recruitment, rather than pure numbers.

5.2.1.2 New recruitment

Analysis of recent recruitment data shows that 476 resources have been recruited into the organisation in 2008/09 to date, which equates to an average of 60 per period. 18% of these new recruits went into Enhancements, giving an average rate of 11 resources per period. This demonstrates that the target recruitment rates for the Enhancements Programme as referenced in 5.2.1.1 above, of around 16/period for the remainder of this year and next, are 50% above the recently achieved rate.

As well as the usual recruitment channels: recruitment fairs, agency, media advertising, it is understood that an increased utilisation of Network Rail's IRecruitment (IREC) tool has been encouraged. Approved job vacancies are being advertised on the Network Rail website. This process is more cost effective and in theory should reduce the timescales associated with the recruitment process.

The vacancy 'snapshot' provided by Network Rail listed 135 approved IRECs within Enhancements. Interestingly, however, (in December) the Network Rail website only listed 63 live vacancies. This variance was explained by Network Rail as being due to the fact that IRECs are raised in anticipation of requirement, but are only published on the website when the need is current. This demonstrates a more forward-looking approach to recruitment which is reflective of Network Rail's drive to adopt a more strategic approach to resource planning.

Recent recruitment fairs in Birmingham and London have also yielded promising results. It is further understood that Network Rail's HR teams are proactively approaching companies that are making sizable redundancies. This is a commendable approach to recruitment and demonstrates Network Rail's interest in drawing multi-sector experience into the business.

5.2.1.3 Permanent/agency resourcing

Network Rail has generally maintained its policy of avoiding recruiting agency staff for project work unless a specific business case supports this, in order to concentrate on internal skills development. This has clear long-term benefits in terms of helping to manage down both the numbers of and averages prices paid for agency resources, and hence supports cost efficiency. It is also helping to grow sustainable internal competency.

The Resource Breakdown in Figure 5 overleaf[vii] shows however that there is an overall trend for increasing utilisation of agency staff, rising from 13.5% at the start of 2008/9 to 16% currently. Although the increase is not great in absolute terms it is nonetheless an indicator that Network Rail is struggling to generate sufficient expertise in-house to satisfy demand

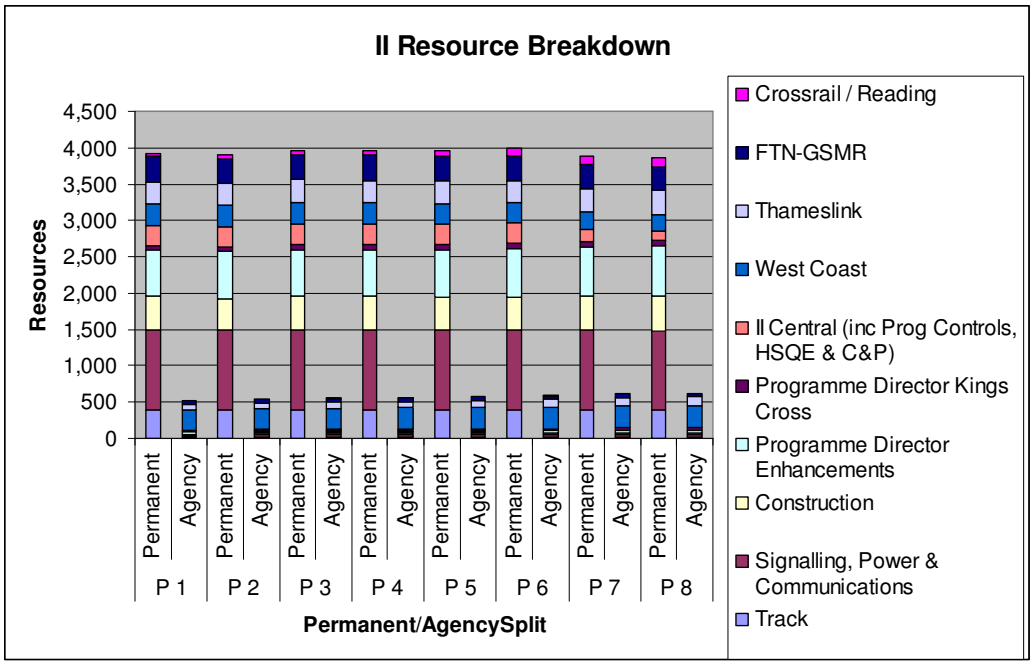

Figure 5: Infrastructure Investment Internal Resources by period in 2008/9

West Coast has the highest utilisation of agency staff. Indeed there is an almost equal split between permanent and agency staff. Upon enquiry, this was explained as being due to the recruitment of agency staff to backfill positions as permanent resources are transitioned onto new projects. Indeed in the Enhancement's Period 8 MBR report, it is stated that West Coast Route Modernisation staff are being identified for matching across to Enhancements, with significant numbers expected.

We understand that Network Rail intends to release these agency resources as WCRM completes, although given the overall demand forecast indicated above, it is not entirely clear that the current pace of recruitment will allow this. One issue with short-term use of agency staff is the loss of knowledge as they exit the organisation. It is recommended, therefore, that Network Rail focuses on knowledge share from agency staff to strengthen in-house expertise.

5.2.1.4 Labour turnover

We requested labour turnover figures and the data provided[viii] for 2008/09 show a turnover rate of 7% year to date for Infrastructure Investment. Of an average of 3,875 employees, 272 members of staff have left the company. This is in line with industry norms and not a concerning figure, and the likelihood is that this figure will reduce based on the current recession.

5.2.2 Recruitment and development initiatives

Network Rail submitted a CP4 Deliverability Assessment to ORR on 1 October 2008, which summarised the various process steps routinely used in Infrastructure Investment to assess and assure the deliverability of a given project or programme of works. This document focussed upon

internal resource development and described six initiatives which Network Rail believed would support its resourcing plan:

- The MSc Project Management Programme
- The Graduate Recruitment Scheme
- The Conversion Engineers Programme
- Graduate Engineers
- Redeployment from West Coast Route Modernisation (WCRM)
- Matrix Management.

Considerable progress has been made with the MSc and graduate programmes as described in the following sections. The impact of West Coast redeployment is noted in 5.2.1.3 above. Matrix Management is discussed in section 5.3.1 below. There has also been continued effort in the leadership programme as follows.

5.2.2.1 Corporate Leadership Programme

Network Rail invested £20m into their Leadership Development Centre in Westwood in October 2005, a notable statement of their commitment in this area. In 2007/08 a Leadership Skills Programme was rolled out across all levels of management.

Based on data provided[ix], to date in 2008/09, 492 Infrastructure Investment resources (13% using an average figure of 3,875 employees) have been through leadership training.

Whilst it is not anticipated that the benefits of attendance on such courses would be realised immediately, there is an expectation that noticeable improvements would be made in the short-term. In our interviews with Train Operating Companies (TOCs) it has been suggested that there are still considerable weaknesses within Network Rail's leadership capability; and that due to lack of confidence in certain areas, direct contact with the senior leadership team is still the most effective method for problem resolution. We provide some examples of this in section 5.2.5 below.

This cultural aspect requires further investigation which we acknowledge has not been possible in any depth in our work. For example, the appropriateness of the courses could be evaluated in the context of the Network Rail environment and culture, and feedback gleaned from the course attendees as to whether they have had the opportunity to apply their learning within their roles.

5.2.2.2 Graduate initiatives

Network Rail currently operates six graduate recruitment schemes - Advanced Apprenticeship Scheme; Railway Engineering; Graduate Scheme; Engineering Conversion Scheme; Civil

Engineering Summer Placement and now the MSc - designed to recruit external resources into the business in a quest to develop them into Network Rail's future leaders.

The Graduate Scheme is structured around Civil Engineering, Mechanical Engineering, Electrical Engineering and Project Management. The Project Management programme is centred in Infrastructure Investment. Approximately 120 graduates are targeted for recruitment into the Graduate Scheme annually. The Graduate Programme is designed to provide graduates with a flavour of the different areas allowing them to demonstrate their capability and, with management guidance, identify their preferred area of employment at the end of the one year programme.

In the 2007/08 Graduate Programme, II's Project Management Programme recruited 35 graduates, 30 of which have been retained within the business and 26 are now in band 5 and band 4 junior project management positions. The largest proportion of graduates (31%) was posted into IIE roles which seems appropriate based on the comparative size of the programmes. In 2008/9 only 20 general management graduates have been sought and secured in Infrastructure Investments, a smaller quantity due to the MSc Programme in-take.

Key lessons learned by Network Rail from the first year of the programme are that the recruitment and assessment stages must be more robust such that only the highest standard of candidate is brought into the Project Management Programme, and further that the graduates must be placed with inspirational line managers such that their initial experiences of Network Rail as an organisation are positive with the company values firmly embedded, so that high retention figures are maintained.

The MSc in Project Management initiative launched in early 2008 was developed in collaboration with Warwick and UCL universities. Upon successful completion of the MSc, graduates will be transitioned into the business filling suitable vacancies within the organisation. In year one of this initiative, 75 graduates have been recruited onto the MSc programme.

The total influx from both Graduate and MSc initiatives are therefore:
2006/7 – 7; 2007/8 – 35, 2008/9 – 86, 2009/10 – 130 (planned)

The rationale behind the sizable investment into the graduate schemes highlighted is that Network Rail is targeting, recruiting and training their future leaders. This is clearly a useful contribution to overall recruitment needs and a very commendable investment in bringing fresh resource into the industry. It is also helping to fill junior management roles in the short term.

Other strategies, such as productivity improvement, as well as investment into part-time further studies for internal resources might have a complementary impact. The latter would allow an application of learning within the organisation, and demonstrate a commitment to the development of current internal resource as well as investment into external future resources.

5.2.3 Capability maturity model

As for any improvement process, an organisation needs to first ascertain its current capability through the assessment of the management of its projects and programmes against a defined set of criteria. This should lead to the production of a strategy and road map for improvement to systematically increase performance, in order to become measurably better against these criteria.

A maturity model provides a robust framework for continuous improvement, and it is absolutely appropriate that Network Rail should be using a maturity model to assess the effectiveness of its projects and programmes, identify the strengths as well as the areas for improvement and construct action plans to improve effectiveness.

Whilst Network Rail has identified its current state and has measured capability on a regular basis as discussed below, a clear strategy and master roadmap to enable improvement has not been seen.

As outlined in the April review, Network Rail utilise the University of California (Berkeley) project management Capability Maturity Model (CMM) and assessment methodology to measure its project management community's maturity and capability. The model was first used by Network Rail in 2006, and has been used annually since then to measure the current maturity of their project management processes and functions.

The assessment is comprised of 170 questions which are directed at Project Managers and Project Development Managers within each asset, whose projects are deemed representative of good and bad practices. Each question carries a series of statements and the answer that represents the majority position is selected. This data is used in conjunction with relevant objective project performance data. The results provide feedback at programme and discipline levels such that individual project teams can identify areas that require focus, and develop action plans facilitated by the central CMM team who guide how best to make the necessary improvements.

The Annual scores provided are shown in Table 1 below. These scores reflect a range of potential performance from level 1 (ad-hoc) through level 3 (managed at project level) and level 4 (managed at corporate level) to level 5 (learning organisation).

Network Rail II Capability Maturity	2006	2007		2008	
	Actual	Planned	Actual	Planned	Actual
Total Average Score	3.51	3.75	3.71	3.85	3.88
Enhancement	3.70	4.00	3.80	4.15	3.95
S&T	3.77	4.00	4.00	4.05	4.00
E&P	3.50	3.85	3.73	3.85	3.91
Civils	3.45	3.75	3.59	3.72	3.71

Estates	3.38	3.75	3.55	3.70	3.90
Track	3.27	3.50	3.56	3.70	3.81
Thameslink	n/a	n/a	3.61	3.75	3.96
FTN-GSMR	n/a	n/a	3.36	3.70	3.63
WCRM	n/a	n/a	4.00	n/a	n/a

Table 1: Capability Maturity Model Results

The overall CMM results show a general improvement (as can be seen more clearly in Figure 6 below), however, since drill-down discipline-specific data has not been provided we are unclear as to which areas of capability require further attention.

It is concerning to see that the three Major Programmes (Thameslink, FTN-GSMR and WCRM) are not 'leading the way' in terms of maturity scores. Due to their size and complexity, capability figures should be representatively higher. Again since the lower level data surrounding these scores has not been provided we are unable to make further comment on areas of weakness.

We understand that Network Rail is in the process of considering the 2008 scores and will then develop improvement action plans in response. We consider this to be critical to the Capability Development Programme and strongly urge Network Rail to prioritise such work.

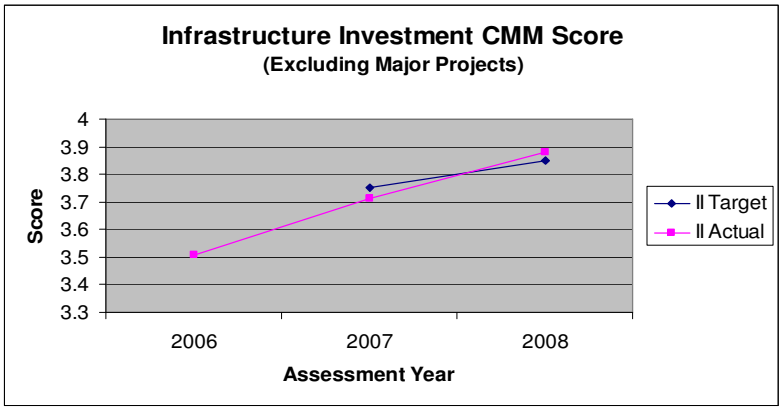

Figure 6: Trend in Capability Maturity Model Scores

Discipline specific data was provided for Enhancements and it has been noted that in 2006 the Enhancement scores[x] were lowest in Human Resources, Quality and Planning disciplines respectively. Each of these improved in 2007. In 2008 Human Resources remained the same, whilst Quality and Planning improved.

Conversely the highest scores in 2006 were in Procurement, Estimating and Scope respectively. Each of these disciplines' scores has dropped over the last two assessments sufficiently so as to be considered by Network Rail as a "worrying downward trend" in their IIE CMM report.

A possible conclusion might be that, rather than maintaining effort in the stronger areas, attention has been diverted away to the weaker areas. In response to our query it was, however, suggested

that whilst the CMM process was prioritised when launched, there has been more pressing work over the last year such as the Improving Project Delivery programme and deliverability reviews, resulting in a "discretionary effort" directed to this area.

The capability data capture and issue has taken a prolonged period, with data collection initiated in September 2008 and full results only available in late January 2009. This could also be indicative of the "discretionary effort" and/or excessive verification. It is felt that once the assessments have been completed, there should be dedicated resource fully focused on the rapid publication of the results and the development and deployment of the associated Action Plans, such that improvement can be expedited. Whilst this has been the case in previous years, Network Rail has focused its resource on the lifting of the current Enforcement notice (Improving Project Delivery) and the Project peer reviews which are regarded as being of a higher priority, resulting in some delay to this initiative.

Competing demands on resource effort are acknowledged; however, **we consider that the results of this process are fundamental to other areas of the business and it should be firmly embedded at the heart of all capability development programmes.** The output should be integrated and fed into key project process review, training and development plans, and further used to inform the recruitment process such that gaps in knowledge, skill and behaviour are filled.

The transformation case studies previously cited recommend that a dedicated Capability Development team with clearly defined leadership roles and accountabilities should be established to gather performance data and promulgate leading practice between projects and programmes; thus enabling a clear and consistent view of what comprises leading practice which can be communicated through Action Plans making the improvements more specific and more measurable. Network Rail's view is that capability development should be led within Programmes so that solutions are developed according to needs. Whilst recognising the merit of this, **we recommended that further clarity around the accountability for and leadership of capability development is established, so that priorities are set and maintained strategically.** We do not see this as being in conflict with delivery of improvements through the Programmes.

It is also imperative that Network Rail establishes excellence in delivery of projects *and programmes*, the latter becoming a more urgent requirement based on the growing size and complexity of its portfolio of work. Currently Network Rail's measurement tool CMM concentrates purely on project capability. From our discussions it seems that Network Rail is aware that since many of their greatest challenges relate to programme management, a capability assessment tool for Programmes should be used in conjunction with the CMM. It was further suggested by Network Rail that since many of its current improvement initiatives relate to programme management, the CMM has been of reduced value and hence prominence in the organisation.

It is recommended that Network Rail does not restrict its capability assessment to project management but further investigate the use of a Programme focused maturity model. The

APM's publication: Models to Improve the Management of Projects[1] has explored the Programme Management Maturity Model (PMMM), the Portfolio, Programme and Project Management Maturity Model (P3M3) and the Organisational Project Management Maturity Model (OPM3); which could serve as a starting point for such an investigation. The APM's review of these models has been summarised below:

PMMM
Uses ten key aspects of programme management and provides a mechanism for benchmarking against other programmes and/or organisations.

P3M3
Is based on 32 processes that span project, programme and portfolio management, and is used to measure an organisation against the P3M3's definition of best practice.

OPM3
Assists organisations in establishing policies and process standards in order to manage projects, programmes and portfolios.

Irrespective of model choice we would encourage the retention of the existing CMM measurement framework alongside any broadening to include programme management, so that the performance baseline and trend analysis is maintained.

5.2.4 Training and development

Infrastructure Investment runs a catalogue of 26, largely bespoke, project management training courses, two of which are Association for Project Management (APM) certified. The 2008/9 figures for training were requested, and the data received[xi] shows that 1,189 resources have received training year to date. Using the average figure of 3,875 II staff, this suggests that 31% of total staff have received training during this period.

The top five courses based on highest attendance in 2008/9 are:

Training Course	% of training days
Project Safety Management	18%
APM Introductory Certificate in Project Management	17%
APM Complete Project Management	14%
Active Risk Manager (ARM)	9%
Risk Management for Project Managers and teams	5%

[1] APM Knowledge: Models to Improve the Management of Projects; 2007.

Based upon the above figures, it would be a reasonable assumption that these areas would, therefore, have seen a proportionate improvement in CMM terms. Until the overall CMM scores have been received, this cannot be commented upon in the whole. With regard to IIE, there has indeed been a significant increase in the CMM risk score. The scores for processes attached to the early stages of a project life-cycle have declined; however, the middle and close-out stages have improved. Should this be indicative of the overall scores, it might be expected that further emphasis on the weaker life-cycle stages within the training courses would be beneficial.

Further to a Training Strategy developed in early 2008, a Training Needs Assessment (TNA) was undertaken of a sample of the II project management community. To validate the findings, the assessment of an increased sample was conducted and we understand that the results are pending publication in early 2009. It is understood that the Infrastructure Investment training budget has already been better targeted with trainee prioritisation profiles established such that the right people receive the right training. To establish the Return on Investment of training spend, trainees' competence levels are measured before a course begins and again thereafter. This, in conjunction with the general competence assessment conducted at six-monthly intervals for performance reviews, is considered to be a potentially robust method for monitoring impacts and informing future training expenditure.

5.2.5 Sponsorship and operational input

Train Operators have told us that they frequently doubt the quality of the sponsorship and operational input to projects, particularly during the development stages; this apparently results in solutions which they believe offer poor value for money and result in late changes to specification to ensure operability. Initial examples given by National Express were:

- Wakefield Westgate
- Neville Hill
- Joint Line.

In each of the above cases we were advised that Network Rail produced track, signalling and OHLE plans without consulting the operators as to what functionality was required.

Further examples provided by First Group were:

- Holgate Junction (HLOS), which was considered to have had "protracted development of an effective solution, a proposal that doesn't fully address the required operating functionality, and unacceptable and indeed excessive disruption proposals based on the nature of works".
- Hitchin Flyover (HLOS) which is considered to have addressed renewal ahead of enhancement thus leading to additional disruption, and proposed a signalling control solution that is not judged effective in operational terms.

- Stevenage S&C renewals in 2007 whereby a poor overall planning of resource allocation led to heavily disruptive possessions being booked and then not utilised as resource was suddenly diverted onto West Coast works.

General views are that simple projects are frequently made complex, and that there appears to be a lack of leadership and willingness to take project decisions without reference upwards, so that projects take a lot longer than they should.

Network Rail has advised us that three years ago there was minimal enhancement sponsorship resource available. As the enhancements demands grew, the sponsorship capability within Network Rail also needed to grow. Most enhancement sponsorship is undertaken through the Route Enhancement Manager (REM) teams. These have grown from 35 in the REM teams two years ago, to 115 in these teams today. The evolution of a national support team to assist in process and competence development has therefore been imperative. As a consequence the Enhancements Services team was formed around a year ago, providing a greater focus on internal and external communications, up-skilling and process improvement initiatives.

The team's communication initiative focuses on sharing best practice and lessons learned between the sponsorship team, and sharing activity and 'wins' with customers. Network Rail routinely obtains feedback from customers through operational liaison channels. In addition, a formal annual poll is undertaken by MORI which surveys the full spectrum of funder and customer satisfaction. We have seen the survey questions which we believe are very relevant to driving improvement in this area. We understand that the responses will not be available until the after the end of January. Given the relevance of the questions, we would encourage Network Rail to use the findings to inform its development of sponsorship training and competency assessment. We also believe that there would be great benefit in sharing the results and Network Rail's intended actions with external stakeholders as part of this communication initiative.

The up-skilling initiative is notable since the sponsorship training portfolio has grown considerably to provide sponsorship skills and processes as well as an understanding of the interface responsibilities within the sponsorship environment. A Sponsor's manual is also in development and a training course designed to support its launch is being constructed and will be run by internal practitioners. This will further address the gaps in process knowledge.

There is, however, some evidence at present that sponsorship and delivery responsibilities overlap. We have seen a draft document which sets out respective responsibilities during different project stages, and although still in development this is a helpful step. To improve consistency in deployment of these responsibilities it is recommended that further effort is put into integrating the sponsorship and project management capability development. For example, a cross-referencing exercise between the Sponsor's Manual and the Project Manager's Handbook should be undertaken to ensure consistency in responsibility depiction.

The sponsorship component of the existing II competence framework has been further developed to assess key competence levels and link the results with appropriate training courses to address

any gaps in knowledge found. An initial competency assessment was made in 2007 and a further assessment is currently underway.

Network Rail ran eight Sponsorship courses in 2008, which in aggregate saw 317 attendees. This portfolio is being further extended in 2009 to include training in key interface areas such as engineering, town planning and project management

The competence framework is a potentially valuable tool, and the breadth of training underway and planned is commendable. Notwithstanding the course 'Influencing, Persuasion and Negotiation', the training to date has mainly focused on the understanding of process and the acquisition of technical knowledge. In line with TOC consultation feedback it is recommended that the focus should not be concentrated solely on developing knowledge but also upon appropriate sponsorship behaviours. This should seek to ensure the application of appropriate behaviours which will ensure timely development and decision making, increased value for money and improved customer satisfaction.

Overall, good progress has been made in this area. The other main recommendation is that Network Rail should seek to ensure a more holistic approach, working with the delivery organisation and consolidating efforts with the II TNA and CMM initiatives. This would enable common sources of data upon which to prioritise and develop joined-up capability drives.

5.3 Organisation

5.3.1 Matrix management

In the April review, it was noted that the Network Rail Infrastructure Investment Group was intending to adopt some of the principles previously implemented by the Information Management department in its rollout of a matrix structure. The intention was to establish a matrix structure whereby all resources are placed in one of 70 or so Practices covering particular skill areas.

The key drivers behind this were understood to be:

- stronger functional leadership and visibility of staff competences
- ensuring that the right resources are allocated to the right projects
- maximising flexibility in the deployment of resources between projects.

The original timescales were to implement the matrix organisation in the Summer of 2008. This is now underway and is expected to go live in readiness for CP4. The latest model is based on all Infrastructure Investment resources belonging to a function. There are eleven functions – listed below – and resources will report directly into a functional Resource Manager until allocated into a delivery team whereupon they will assume a dual reporting line – direct reporting into the delivery team and dotted line reporting into the Function:

- Contracts and Procurement (C&P)
- Health, Safety, Quality and Environment (HSQE)
- Programme Management
- Project Management
- Construction Management
- Track Engineering
- Building and Civil Engineering
- Signalling Engineering
- Telecoms Engineering
- Systems Engineering
- Electrical and Power Engineering.

Each Function will be responsible for its people, processes and performance, and these functional plans must be adhered to by the Programmes and Major Projects when integrating various functional teams into one unified delivery team. Once a resource has completed their role in the delivery team, they will return to their function and await further deployment, ideally taking the knowledge and skills they have acquired to their next project.

The benefits of a well implemented matrix organisation are considerable. In the short term, Network Rail is anticipating an improved focus on recruitment and more flexible resource deployment, leading to optimised staffing levels and resource utilisation, thereby reducing Opex and increasing Capex efficiency. In the longer term they are also expecting a more consistent approach to remuneration, staff training and development; and the deployment of processes and tools across the organisation. It is surprising however that there is apparently an absence of measurable objectives for efficiency or any of the other benefits listed above as a consequence of implementing the matrix organisation.

The matrix model has changed over the last financial year in order to simplify the application and to retain stronger organisational leadership with the programme delivery areas. There has been substantial progress with design, consultation and briefing of the changes. Two of the disciplines: Contracts and Procurement and HSQE are effectively operational under the new structure. Resource Managers are currently being recruited with an expectation that they will be in post by the end of 2008/9.

This is potentially a major organisational change which could impact delivery adversely in the short term. Network Rail is confident that the time which has been taken in designing, planning and

communicating the changes will minimise the risks. However, they also recognise that there will need to be a period of review after the changes have been implemented, and that full effectiveness will take some time to achieve.

As mentioned above, we believe that the implementation could be improved by establishing clearer targets for the various benefits which are sought. This will help to communicate the drivers for the change and enable more focused monitoring and review of the implementation, leading to more rapid learning and effectiveness.

5.3.2 Transformation directors

Six "heavy hitter" Transformation Directors are currently being recruited to manage the "6 Big Things" for CP4: Asset Management, Asset Information, Efficient Infrastructure Delivery, Network Operations, Service Delivery and Organisational Effectiveness. The Transformation Programme team is building upon the World Class initiative and, in collaboration with an external organisation, is constructing a PMO.

The Directors will operate across Network Rail functions, but as yet it is not understood what impact this will have on project delivery in particular. However, we recognise that this provides a potential opportunity to focus and integrate change across particular objective areas and as such we believe that this is potentially a positive step.

5.4 Process development

5.4.1 Project development and management

The project development and management process is at the heart of effective enhancement delivery. Network Rail established the Guide to Investment Project (GRIP) process in 2003, and this is generally acknowledged by NR and its customers and funders as having had a beneficial impact upon improving project delivery success.

However, the GRIP process is not without its critics; Train Operators frequently cite the GRIP process as being cumbersome, leading to slow and in-efficient development. Partially in response to this, Network Rail has advised us of two steps which have been taken, or which it is in the process of taking, in order to improve this process:

- fast-track development
- The Project Manager's Handbook

In addition, we have seen evidence of some related improvements which we believe are likely to impact upon the effectiveness of the process, although they also have other objectives:

- Programme Management Functional Improvement Plans
- Project Peer Reviews

5.4.1.1 Fast-track development

We understand this initiative to have been primarily about providing a mechanism for rapid development of project proposals through optioneering, so that clients have a clear assessment of what delivering a required output will entail. This was intended to address a perceived development bottleneck, but was understood to be primarily applicable for less complex projects. The revised process was implemented in mid-2007.

Network Rail has suggested that this approach will assist in delivery of the CP4 enhancements. We had some doubt about the applicability of the approach to the bulk of CP4 spend, given that most of this lies in projects valued at >£5m. Based upon feedback from TOCs we also had some doubts about the impact this has had to date upon investment delivery.

We therefore asked Network Rail for evidence of the level of application of the fast-track process, the types of project to which it has been applied, and the benefits in throughput it has realised. We were provided with schedules detailing the fast-track portfolio for each Territory, including project values, fast track durations and the current project status.

There is considerable evidence of widespread application of the concept; in total the approach has been applied and completed for some 255 projects over the last 18 months. Most of these projects have been valued at less than £2m, although in a few cases the projects have been of much larger value, typically up to £10m and occasionally up to £200m. The process has generally been applied to take a project to the end of GRIP 3 (single option development) although in some cases it has only been used to produce a GRIP level 1 or 2 output.

The time taken to complete a fast track study is typically only 2 to 8 weeks, although this appears to vary by Territory, with Western taking an average of five months. However, the limited availability of fast-track resources means that there is typically at least a three-month lead-time before commencement. In many cases there also seems to be a considerable delay before reports are finalised.

Surprisingly only six of the 255 projects have subsequently moved on into design and implementation. In many cases it is clear that this is because the projects have failed to generate a business case, or secure funding. Clearly there is value in this in itself, as it provides clarity to potential sponsors and funders of the viability of projects. This will also ensure that development resource is put to the most productive use. However the lack of implementation progress would appear to suggest that the fast-track approach may simply have replaced one early development bottleneck with a subsequent one.

5.4.1.2 Project Manager's Handbook

Network Rail has informed us of this initiative which sets out to integrate the various internal GRIP guidance together with recently generated project controls procedures and working instructions. This is intended to provide a more concise single source of information with a clear hierarchy of policy, instruction and guidance. This initiative will also enable the recent improvements in planning for delivery (see 5.3.2 below) to be incorporated. We also understand it will clarify sponsors and engineering roles, especially in early pre-GRIP stages. The development of this is advanced, and it will be rolled out internally in early 2009.

We have been provided with some detail of the improvements in relation to engineering input to the project remit and specifications. A new internal standard has been produced[xii] which sets out how grouped renewals and enhancements form the basis of the remit that will be produced for multi-disciplinary CAPEX infrastructure projects. The aim is to achieve cost and scope efficiencies by combining renewals and enhancement where practicable, and clearly defining respective requirements. This is potentially a very positive step forward in establishing a clear intent and process, and thereby facilitating cost-effective enhancement. This is an area which customers have commented upon as being an opportunity for improvement, so it is positive to see this being addressed, although the impact of this remains to be seen.

These changes to GRIP are positive and should help to ensure internal clarity, and may well assist in the ability to internally communicate project requirements and hence achieve improved consistency in development and delivery. However, it only appears to have involved limited review and improvement in the actual development processes themselves (as described in 5.3.2 and above), so it may not greatly improve overall productivity or do much to address the criticisms which GRIP attracts from customers in relation to a perceived slow and over-complex process.

5.4.1.3 Functional improvement plans

Early in 2008, Network Rail established a standard methodology for reviewing and improving its internal processes, based upon the adoption of Functional Improvement Teams (FIT) and associated Functional Improvement Plans (FIP). This involves a small group of individuals coming together to address a business issue, and where possible producing a transferable resolution process. This has the potential to be a significant knowledge-share initiative and one that could quickly disseminate lessons learned across the organisation. We understand that team members join the FIP on a voluntary basis and are expected to undertake these improvement initiatives in addition to their ordinary duties. The concern would of course be to ensure that work is prioritised appropriately such that business-as-usual works are not impacted, but this may result in slow progress with the FIP.

One such FIP has been applied within the Programme Management discipline to review and make a number of improvements to Project Controls. These plans appear quite wide ranging involving improvements to People, Process and Systems and there are a total of 29 separate initiatives embraced by this FIP.

However, Network Rail reports[xiii] that over half of these are currently behind plan and on-hold. Only four have progressed as far as the Delivery phase when the improvements will start to have benefit. Network Rail notes that, much like the delay to CMM data review and action planning, this is partially due to the pressures of other concurrent changes and activity such as the response to the Project Delivery enforcement order and planning for CP4.

5.4.1.4 Project peer reviews

Network Rail has established a process complementary to its GRIP stage gates, by which the most complex projects are subject to an independent peer review to assess their readiness to progress. This involves a rapid review of project progress and plans, by experienced managers, to a defined remit. The attendance at these reviews normally involves a mixture of senior discipline heads and experienced delivery managers. Improvement actions are identified for the project team, but are also shared across the organisation, and systematic issues can potentially be picked up through functional improvement plans.

To date this approach has been applied to 10 of the top 40 projects by value most of which are in GRIP stage 5. We have seen one of the output reports from these reviews, for the Reading project (further detail in section 7.3.4 below). There is a forward plan for these project reviews over the next 12 months which has been agreed at Board level, which will address some 24 of the largest projects, including 10 HLOS projects. We also understand that Network Rail intends to cascade this approach down to lower complexity projects in CP4, although there is no formal plan for this.

We believe that this is a good step forward in helping to provide assurance of deliverability at project level, as well as providing a further mechanism for continuous improvement. **We suggest that this should form a key component of assuring delivery of the CP4 enhancement programme, and the forward plan should be reviewed to ensure that the HLOS projects are included. We believe that it is important that the voice of the customer is heard as part of these reviews, and if it is not deemed appropriate to involve them directly, then it should be mandated that sponsors attend these reviews as a proxy for the customer viewpoint.**

5.4.2 Improving project delivery

Improving Project Delivery has been a prominent improvement plan since it was created in response to the review of delivery in New Year 2008, and the subsequent ORR Enforcement Order in April 2008. Network Rail's plan for this initiative was published in June 2008[xiv].

The subsequent proposals have addressed four main themes:

- commercial management, including Network Rail's new tender assessment tool and its approach to supplier 'critical resource management'
- a new 4-step risk management process, involving grading worksites by complexity and adopting more rigorous planning and contingency assessment for sites of higher risk

- more rigorous site management, monitoring and escalation procedure during possession
- improved communication protocols with customers and suppliers, and internally within Network Rail.

As these processes have been subject to separate review in development, and will be subject to further audit by the Reporters Halcrow, we have not sought to examine the plans and their implementation in detail. We note that these processes focus primarily upon assurance of delivery in site works planned under possessions, although the additional actions taken in relation to supplier evaluation of competence and resourcing at tender will have broader benefits. We also note that they are as yet untested in application.

5.5 External resources

We highlighted in our April 2008 report[xv] that Network Rail's capability to deliver the workload of CP4 is highly dependant on external resources. In this further review, we have been keen to explore the progress that Network Rail has made in engaging the external rail supply industry and in developing its capability.

Also in our previous report we set out a number of factors that would determine the supply market's ability and inclination to grow its resources:

- maintaining stable and mature relationships
- improving supply chain processes and culture
- encouraging supplier confidence by maintaining consistency of demand forecasts and ensuring that these are reflected in its procurement
- smoothing peaks and troughs
- establishing long-term work banks, thereby locking-in suppliers and enabling investment and securing efficiencies
- providing training in special-shortage skills areas.

In addition, we highlighted that any apparent lack of transparency between Network Rail and the supply chain acts to dent confidence that the programme will happen, and that this consequently represents a risk.

Our overall findings in this area are positive. It is evident that Network Rail and the external rail supply industry have made real progress against each of the factors previously highlighted. Indeed, RIA reports very good engagement between Network Rail and RIA's Members. **Nevertheless, this progress needs to be sustained as more of the work for the CP4 capital programme is procured.**

5.5.1 Market engagement maturity

Network Rail has developed a supply chain maturity model, demonstrating its intent to move from an essentially 'adversarial' contracting strategy, through 'market engagement' to 'collaboration' and ultimately to 'partnering'. RIA has been actively involved in developing this model. Figure 7 below[xvi] illustrates this model and Network Rail's assessment of its current position along this path.

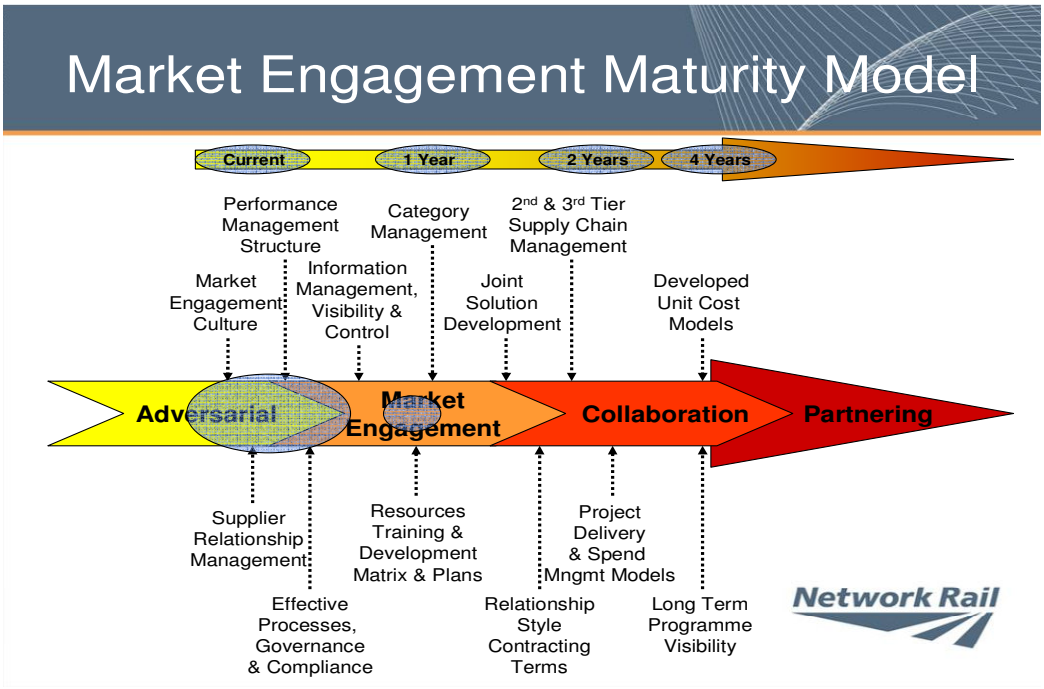

Figure 7: Supply Chain Capability Maturity Model

The above figure demonstrates the strategy that Network Rail is adopting in developing the relationship with its suppliers. Network Rail recognises that it is still at a relatively low level of maturity on most aspects. Whilst the appropriate destination point along this path is a matter of judgment – and will be "horses for courses" depending on the circumstances of each programme and project – we see this approach as both positive and refreshing. It is clear that progress is being made, to the benefit of the CP4 enhancement programme.

We understand that there has been a very positive reaction from the supply market to Network Rail's supply chain maturity model, partly because it gives suppliers the opportunity to score Network Rail against clear parameters. Similarly we understand that the supply market is pleased that Project Management has now been included in this model. RIA advises that to date there has been good correlation in most areas between Network Rail's scores and suppliers' scores.

We are advised that the next step in this process is to hold '360 degree appraisals' between Network Rail and suppliers and to agree Key Performance Indicators. We note that the model design is now frozen and that the measurement of current position against this model will commence in 2009, although we have only seen a high level timeline for rolling this out across the supply base. Once measurement is available this will be used to target the five supplier Action

Plans which have been developed following the 2008 Annual Supplier Conference (see section 5.4.5).

5.5.2 Supply chain strategies

We are informed by Network Rail that it has made significant progress with its contracting and procurement strategies, achieving Board-level sign-off on all asset category strategies in early December 2008. We have seen copies of these strategies, and understand that they are in the process of being communicated to the supply chain, for instance a useful presentation on the Design strategy was made to RIA on 21 January 2009.

A decision process has also been established which will be used to dictate the choice of delivery route for projects. This will facilitate adoption of a delivery channel (e.g. decisions as to which programme team will manage the project) and procurement strategy consistent with managing inter-disciplinary and programme risks. We enquired as to what proportion of the enhancement programme it was expected would be delivered through different delivery routes, but were advised that this had not yet been decided. Instead, this decision process will be applied to projects as they progress through the later stages of development.

As the choice of delivery route will make a significant impact upon the volumes of work to be managed by different programmes, and passing through different supply categories, **we suggest it would be helpful to make a provisional assessment up-front by types of work, for strategic planning purposes.** This delivery strategy assumption would assist with the strategic planning of both internal and external resources.

An interesting development is the creation of separate category for Multi-Disciplinary Works. This is aimed at driving efficiencies and performance improvements through the closer management of fewer suppliers within a coherent and flexible commercial framework. We see this as a departure from the previously adopted 'hub and spoke' strategy which has applied to multi-disciplinary re-signalling projects in CP3.

The multi-disciplinary works category reflects a desire to procure a construction management and technical integration approach from the supply chain. Under this approach the allocation of risk to the supplier for managing interfaces is much clearer. However, the ultimate performance risk remains with Network Rail. Consequently a more mature, trusting relationship is required between Network Rail and its suppliers.

Key drivers for the multi-disciplinary approach are the inherent reduction in overall bidding costs and the opportunity to drive value out of the process. From the suppliers' viewpoint, the multi-disciplinary approach will provide greater certainty for suppliers to grow and develop their resources. This certainty will increase yet further as Network Rail moves towards 'committed volume' framework contracts for a proportion of its workbank. However, we note that Network Rail

is as yet uncertain what proportion of its enhancement workbank will operate through this supply chain category.

5.5.3 Critical resource management and tender evaluation

Network Rail has further developed its approach to critical resource management during 2008/9. Some 54 critical resources are identified, and we understand that it is intended that each will have a demand forecast and critical resource owner responsible for development of resourcing plans. Where the demand is forecast to exceed 90% of available supply, the resources are deemed 'scarce'. Scarce resource management plans and micro-processes to control allocation at project level have been established, with a new focus this year notably for OLE resources.

It is clear that these processes are still being refined and the output from a recent improvement workshop[xvii] suggests that there is still some significant embedding to do across the business. Nonetheless this process appears significantly more comprehensive and robust than previously and further improvements are clearly planned. **We recommend that the refinement and embedding of this process is given clear priority. We also suggest that care is taken to ensure that demand forecasts for all critical resources flow from a single master capital plan, which is subject to robust change control.**

Network Rail has introduced a new tender evaluation tool to be applied to any tenders valued greater than £500k. This examines the components of the tender by asset category, identifying critical resources within the tendered work. This process is designed to ensure that critical resources are deployed optimally and that all work contracted is capable of being properly resourced.

We recognise that application of the new tender evaluation tool is in its infancy; the initial market reaction to it appears generally positive. This is an important step in improving visibility and provides appropriate signals to the supply chain of the importance which Network Rail attaches to resource planning. **If Network Rail can find ways to share the resourcing information proactively with its suppliers we believe it will be even more beneficial.**

5.5.4 Forward tender programme

We have viewed Network Rail's forward tender programme for IIE and we note that this only identifies tenders for around 50% of the planned work over the next two years. If this were to be the case it would be indicative that the programme is not yet fully developed, and also not giving full transparency to the supply chain. We are advised however that a significant volume of work has already been committed and is thus excluded from the forward tender programme.

It has been reported to us that suppliers are concerned that work is not coming out to tender at the rate expected by them and promised by Network Rail. Suppliers are gearing up for expected work,

only to find that it is being delayed. This causes gaps and volatility in demand and contributes to damaging confidence in the supply base.

5.5.5 Supplier conference follow-up action plans

We note that five workshops have been held between August and October 2008 following up on the Supplier Conference in July 2008. Each has focused on a separate asset category:

- Design
- Multi-functional
- Track
- Signalling, Power and Comms
- Construction.

We understand that good progress is being made in some of these areas – for example Electrification. Contractors have been contributing to developing OLE Standards and competences, to a far greater extent than has previously been the case. These companies have shared their training modules voluntarily with Network Rail. This has been cited as an example of excellent joint working.

Notwithstanding the above example, our view is that the action plans from these workshops are of variable quality; for example we regard the Construction workshop actions to be less purposeful than some of the others. As currently drafted, we consider there to be a lack of clarity between outcomes sought and actions to be taken and none appear to have dated action plans.

Failure to close out actions from these workshops in a timely manner would erode supplier confidence and undermine credibility in the overall market engagement strategy. **We therefore suggest that Network Rail reviews the consistency of action plans and adopts more of a programme management approach to the actions identified in these workshops, managing and reporting progress towards satisfactory resolution.**

5.5.6 Supply market changes

We note that there have been some significant changes in the supply market over recent months. These include acquisitions (e.g. Carillion's acquisition of Mowlem and Alfred McAlpine; Colas acquisition of Amec Spie Rail; and Balfour Beatty's acquisition of Birse and Dean & Dyball), significant joint venturing (e.g. between Amey and Colas), refocus, reorganisation and organic growth. Overall, it is apparent that the market capacity for rail infrastructure works is growing. Consolidation may however represent a threat to competition.

5.6 External dependencies

5.6.1 Impact of economic downturn

We have given some consideration to the effects of the recent economic downturn and any impacts they might have on Network Rail's delivery of its enhancement programme.

Government-funded committed schemes, which include the rail enhancement schemes, will inevitably represent a larger proportion of the overall industry workload as some privately funded schemes are shelved and/or timescales extended. This will benefit Network Rail's ability to resource its enhancement programme. Network Rail is also reporting an increase in interest in suppliers bidding for its work.

RIA has carried out a recent Business Survey with its Members. This was carried out in November and December 2008 and the results will be published at the end of January 2009. We understand that the headline from this survey is that optimism within the supply base is no longer growing, but neither had it decreased at the time of the survey. Quoting directly from RIA's Update No. 39 issued on 16 January 2009: *"Demand is now the greatest single constraint on business across the supply industry….. Skills shortages, while overtaken as the greatest concern, nonetheless remain a key issue at the same time. The survey was carried out as the impact of the recession was becoming more visible and the results reflect a very fast-moving scene. Most RIA Members remain optimistic about their business prospects, but growth in optimism has levelled off. Fluctuations in orders and workload are a major problem, hampering efforts to reduce costs and to foster and retain skilled staff. The impact on the supply chain is especially serious, and is compounded by the financial crisis. Reduction in work activity for some national rail projects is also causing serious difficulties. Moreover, input costs of materials and resources have been continuing to grow in nearly all areas, but are not being passed on fully to customers."*

Logically, one might expect a decrease in unit costs as the downturn takes hold, but Network Rail is not seeing this yet. Indeed, as quoted above, RIA reports that input costs of materials and resources have been continuing to grow in nearly all areas, albeit that these are not being passed on fully to customers. Nevertheless it is possible that in due course, cost reductions due to increased competition between suppliers will benefit the overall programme.

Significant challenges for Network Rail under these market conditions include:

- maintaining the confidence of the external rail supply industry, in order to sustain its growth and investment. This confidence will depend on Network Rail's ability to achieve its planned procurement programme. This is a particularly significant issue with the supply industry.
- continuing the trajectory of the market engagement maturity model, in the light of increased competition and reduced 'power' of suppliers; in particular avoiding the temptation to gain opportunistically by applying more stringent terms at the expense of long-term disbenefits

- managing the risk of 'short-termism', so as not to jeopardise the health of the longer-term programme.

Additionally, we understand that Network Rail is already seeing recruitment improvements in terms of quantity of applicants. This may not however result in any improvement in quality of applicants, as in tight markets there is a tendency for the better employees to be less mobile in employment.

5.6.2 Rolling stock strategy

In our previous report we noted the criticality of the interface between the rolling stock procurement and cascade strategy and the enhancement programme. This remains a key risk area in relation to delivery of the HLOS in England. The risk is that the development of the infrastructure solutions will not remain aligned with the detail changes to rolling stock and service patterns as these are negotiated with Train Operators. However, it is apparent to us that the maturing relationship and processes between DfT and Network Rail to some extent mitigate against this risk.

We understand from our discussions with both DfT and Network Rail that it is recognised that the emerging rolling stock strategy may identify additional requirements to the HLOS outputs, for which changes to the Network Rail programme of enhancement may need to be negotiated during CP4. The DfT has provided a master delivery schedule for the rolling stock to Network Rail, which details many rolling stock assumptions and the envisaged phasing of service negotiations and implementation. This plan is indicative only, as it is subject to commercial negotiations with Train Operators. Network Rail is also playing an active part in the ongoing development of the rolling stock strategy on a route by route basis, by assessing and advising DfT of the infrastructure implications. This will allow optimal decisions to be taken, in relation to the impact of proposed service changes, before these are contracted.

In addition, the Network Rail supply strategy, and in particular the multi-disciplinary framework approach discussed above, provides a higher degree of flexibility where adopted, which could assist in accommodating variations in the infrastructure requirements associated with the rolling stock strategy.

One of the purposes of the CP4 Delivery Plan is to provide all stakeholders with further detail in respect of Network Rail's plans, in order to improve alignment between rolling stock strategy and enhancement delivery. Nonetheless, we still believe that more could be done to improve and maintain this overall alignment. We understand that the DfT has not had detailed progress reports on the development of the HLOS projects to date. We suggest that it would be desirable for Network Rail to provide a greater degree of transparency to DfT, through regular reporting of its progress and plans for development and delivery of each route enhancement to enable DfT to optimise its own planning. This is discussed further in section 6 below, in relation to our remit to review development progress milestone monitoring.

We also suggest that Network Rail should declare its assumptions in relation to rolling stock deployment and service plans as part of its enhancement project descriptions within the final CP4 Delivery Plan, so that all parties are clear about these. The service plan should identify at least the levels of peak and off-peak capacity to be provided, and ideally indicative timetables, and the timetable period for which the enhanced capability is intended to be provided. Rolling stock assumptions should include train lengths and fleet types or equivalents where new vehicles are being procured. We understand that these assumptions have already been identified by Network Rail and shared with some Train Operators, but it would be sensible for them to form part of the baseline Delivery Plan.

In addition, we note that there does not appear to be full alignment of Network Rail's own plans in relation to meeting the London suburban capacity HLOS outputs. The platform lengthening projects are apparently sequenced to complete up to two years ahead of the power supply upgrades which will be required in order to operate the additional services with full resilience. We understand that completion of the power supply enhancements is constrained by supply of long-lead items. Although it may be feasible to deliver partial outputs by running longer services at reduced levels of power consumption, this is unlikely to be desirable, and further consideration should be given to trying to align these elements, ensuring that they match with planned service changes.

5.7 Overall capability development programme

In assessing whether the various initiatives which we have referred to above represent an effective overall capability development programme, we have considered the elements of good practice identified in the external capability programmes described in section 5.1 above:

- Is there clarity of purpose and explicit objectives and measures?
- Is there a clear strategy, road-map and associated milestones?
- Is there reasonable breadth and depth of development?
- Are the various elements of the programme being coordinated and managed to reflect interdependencies?
- Is there adequate over-arching leadership and clarity of accountabilities?
- Is there clear stakeholder management, such that the programme retains relevance and support?

We have seen statements of purpose and objectives in relation to most of the individual initiatives which are being progressed, but these appear somewhat piecemeal. We do not consider that this exists as an integrated whole in relation to the capability programme. Without this it is not possible to be confident that the individual elements will achieve the required capability. We believe that a

clearer sense of purpose and direction could be achieved by establishing and communicating a single consolidated capability development strategy. **We recommend that Network Rail defines in the CP4 Delivery Plan a capability development strategy and master roadmap with clear targets.**

In general we consider that the capability development does demonstrate adequate breadth, although we have some reservations about depth as discussed against certain sections above.

There is also good evidence that the initiatives have been designed to take account of some interdependencies. Examples are:

- The approach to identifying and managing critical resources is linked to the new matrix management structure and to the supplier tender evaluation process
- The Project Manager's Handbook will promote the Fast Track process and recent outputs from the Improving Project Delivery workstream.

However, this is far from universally the case. **We recommend that Network Rail implements the capability development programme in an integrated manner, identifying and proactively managing all key interdependencies;** examples are:

- utilising CMM data to drive future process improvements and training
- focusing training and recruitment on aspects critical to enhancement delivery
- broadening the capability maturity measurement to encompass programme management and sponsorship
- integrating sponsorship development efforts with the Infrastructure Investment Training Needs Analysis and Capability Maturity Model initiatives, so that learning is transferred and internal expertise is harnessed.

Network Rail has demonstrated that there is reasonable clarity of accountability and leadership in relation to the progression of different elements of the programme. Its new matrix management structure will put this in a number of places. However, we believe that further consideration needs to be given to the mechanisms for ensuring overall prioritisation and coherence of the different elements. **We recommend that the accountability for and leadership of capability development is clarified.** This will help to ensure a focus on the correct priorities, consistency of approach and that sufficient resources are committed for delivery.

Finally, we see significant evidence of stakeholder consultation in relation to a number of elements. Clearly Network Rail's own business planning and reporting processes facilitate this internally, and its customer and supplier surveys, conferences and workshops facilitate externally. **We believe that this could be reinforced through use of the CP4 Delivery Plan and reporting processes to communicate overall plans and progress.**

6. Enhancement project development progress monitoring

Network Rail has a very large portfolio of investment projects. Monitoring progress across such a large and diverse portfolio is a considerable challenge in itself.

In the Draft Determination, ORR asked Network Rail to "provide progress reports on enhancement project development milestones for ORR to monitor", as noted in our remit in Annex B.

In our discussions with train operators and funders we also asked them what their experiences have recently been of progress reporting, and also what expectations they have in relation to this activity for CP4 enhancements. We have found some significant differences in relation to the experiences of funders in relation to the specified Major Projects, where visibility has been good, and the experiences of Train Operators and the DfT in relation to the large number of smaller projects developed in response to HLOS capacity and other output metrics, where visibility has been less good.

In particular, Train Operators told us that they have found the development of responses to the HLOS projects to be of variable quality. We have cited some examples of this in section 5.2.5. In some cases there has been a lack of transparency of the rationale for pursuing particular solutions, and a lack of detail regarding proposed scope and hence the justification for the durations required to deliver solutions. They have also told us that they have not generally been involved to date in development of the proposed draft CP4 Delivery Plans, leaving them concerned that there will be inadequate time to make any necessary changes between the consultation process and the final publication.

Network Rail has told us that it liaises with TOCs and other stakeholders on an ongoing basis throughout project development. TOCs have also been involved in the development of the performance plans and draft Route Plans. TOCs are also routinely involved in the development of route enhancements through attendance at the Route Investment Review Groups. Nonetheless this perceived lack of communication in relation to project development is not conducive to ensuring TOC support for projects, or confidence in the delivery of the HLOS.

The DfT has taken a hands-on sponsorship role in relation to the specified Major Projects, providing it with very good visibility of progress. We understand that the DfT believes that the 'schemes' overall will meet the HLOS outputs, but the timing and detailed delivery plans are yet to be provided by Network Rail. The DfT has provided Network Rail with its indicative master rolling stock delivery schedule, as discussed in section 5.5.2 above. It will clearly be desirable that the rolling stock delivery and infrastructure delivery are aligned. This alignment, together with the potential identification of additional infrastructure enhancements to support the rolling stock plan, will only be confirmed by Network Rail as each rolling stock and service change is negotiated with

relevant Train Operators. The DfT therefore recognises that there will need to be some flexibility in relation to this schedule and in particular in the delivery phasing of specific projects in order to allow for efficient delivery. It is therefore crucial that timely visibility of progress and plans is provided to DfT.

We asked Network Rail to explain its internal approach to planning and monitoring of project and portfolio progress, specifically in relation to the Enhancement portfolio. We have received copies of the monthly reporting packs generated for the Scotland Territory[xviii] and also for the national Infrastructure Investments Enhancement programme[xix].

Although these provide good evidence of monitoring of current high profile projects, as well as progress in resource development, **there is apparently no systematic monitoring of development progress for the national CP4 enhancement portfolio**. The Territory MBR pack for Scotland does provide a milestone monitoring schedule for CP4 projects, but it would seem that this is not yet being populated.

The detailed project schedules which we have seen appear to be of variable quality and depth. This is perhaps inevitable, given the differing stages of development, and we may well not have seen the most detailed levels. We understand that Network Rail has defined certain minimum mandatory milestones which should be included in all enhancement project plans; assuming that these address all critical generic approvals and development steps, this will be a helpful step in assisting project monitoring. Network Rail has also advised us that it expects to monitor routinely against the enhancement milestone commitments to be published in the CP4 Delivery Plan.

We have been advised that Network Rail has very recently launched a fresh initiative to "generate a high level plan for CP4 in P3e in order to provide a reference point showing the impact of current issues and management decisions on Infrastructure Investment. This is intended to enable modelling of scenarios and decision options and provide interlinking of scope, schedules, cost and resource planning with risks and issues"[xx]. This is potentially a very valuable tool, and may also support the milestone monitoring of projects and overall programme reporting. However we have not seen a timescale for its implementation, or any details of the management mechanisms by which it will be used to control projects.

We have also been briefed by Network Rail in relation to its intention to establish more rigorous milestone monitoring for the larger projects in its portfolio. This approach will allow P3E planning data to be summarised so that Red /Amber/Green flags can be applied for all key milestones. We have been provided with some example report formats in relation to the renewals portfolio. Network Rail is still finalising the approach to be applied for the enhancement portfolio; for instance it is still considering which projects and milestones should be monitored. It expects this milestone monitoring approach to become established by the start of CP4.

The above two improvement areas appear to be helpful developments in relation to monitoring and controlling progress. By identifying the key projects and processes where slippage is evident, Network Rail will be able to focus on systematic issues and corrective action.

We recommend that Network Rail consult with customers and funders to understand their requirements as part of formulating the specification for this monitoring process. Given the evident strong customer and funder interest, and indeed the specific ORR direction, we also recommend that Network Rail seek to implement milestone reporting with some urgency, so that it is effective from the start of CP4.

We recommend that a core set of standard development milestones are identified, linked to the CP4 Delivery Plan. These should embrace both the Delivery Plan committed milestones for key development stages, and supporting intermediate milestones for process steps which represent high risk processes, such as network change and TWA approval.

7. Delivery of 2009/10 plans

7.1 Analysis of portfolio and selection of key projects

Although all of the enhancement projects are scheduled to progress during 2009/10, the expenditure profile is dominated by a relatively small proportion of the programme. The top 19 enhancement projects by expenditure account for some 90% of the Determination funded enhancements, and approximately 2/3 of all enhancement expenditure. These top 19 spend projects are listed in Annex C together with a summary of their forecast expenditure and current status.

In our assessment, we therefore chose to focus on the status and plans for these top 19 spend projects. We sought the summary schedules and cost plans for each project, and were also provided with the risk registers for a sample of the projects. The plans which we were provided with dated from November 2008.

The Thameslink project is substantially the largest project planned in CP4, and is also the largest single area of expenditure in 2009/10. We therefore also held an interview with the Programme Director, Thameslink to understand the plans and risks, and the development of the programme specific capability.

We have not had time in our review to consider some of the other major programmes identified in Figure 3, such as Crossrail and the Edinburgh to Glasgow improvement project.

We summarise in 7.4 below our observations in relation to the delivery plans for each project. In each case we have reviewed recent project progress and made an assessment relative to outputs expected to be delivered in 2009/10. Since few projects are expected to deliver outputs in 2009/10 alone, we have also taken expenditure as a proxy for progress. We have therefore made an assessment of the likelihood of achieving the expenditure profile assumed for 2009/10 in the Determination, which itself was based upon Network Rail's Strategic Business Plan and April 2008 update. We have made this assessment in the main based upon the cost loaded schedules supplied by Network Rail, supplemented in some cases by an estimate of the likely percentage of costs by GRIP stage. This is detailed further against individual projects below.

It should be noted however, that our assessment has been a relatively high level desktop exercise, and with the exception of Thameslink we have not had direct discussions with project teams, or verified the accuracy of the status, schedule and risk data supplied to us. We have endeavoured to assess the realism of delivering against these plans, but have not had an opportunity to verify recent physical progress.

7.2 Development and delivery progress in 2008/9

Annex C presents the current development status of each of the top 19 projects, and compares this with the position reported at September 2008. These projects have progressed broadly in line with plans, with six projects having passed through one further stage and one project (ECML Capacity Relief) having passed through two GRIP stages. We comment upon their readiness for 2009/10 in section 7.3 below.

We have also examined the development progress for a selection of 22 of the smaller projects for which we have been provided with high level schedules. Of these, the majority are currently at the GRIP levels anticipated in the Strategic Business Plan update, although four appear to be one stage behind and four one stage further advanced. However, in the majority of cases (17 out of the 22) the overall schedule for implementation has slipped compared with that previously published. On average Network Rail is now forecasting to take one year longer to implement these projects. It is to be expected that as projects are developed, in some cases it will be come clear that there are issues which will take longer to address than originally anticipated. This might however expect to be compensated by taking the opportunity to accelerate in some cases; only four projects appear to have improved their delivery schedule.

Provided that the plans are consistent with the required delivery of outputs, this re-phasing may also be helpful to provide some degree of smoothing to a previously front-end loaded profile. However, Network Rail needs to take care to ensure that the schedules do not slip further, thereby creating a bow wave of delivery which could place overall delivery of outputs in CP4 at risk.

There is a potential interaction with the efficiency targets, as these may result in extended development iterations and procurement process, delaying resultant delivery. We have seen evidence of this in general in relation to the 2008/9 delivery as described in the 2008/9 Quarter 2 Monitor[xxi]. This is also apparently the reason for the planned re-phasing of renewals expenditure from 2009/10, as noted in section 4. Network Rail also explained that the fact that the Determination had placed an efficiency overlay upon the HLOS projects was proving challenging, and leading to a need to iterate development cycles in order to drive affordable solutions. This had already delayed some projects, such as Shaftholme Junction and York Holgate Junction, and will place a further potential delay in completing development to others, although overall Network Rail believes that it will be able to meet this affordability challenge. Network Rail is taking a number of steps in driving standardisation and procurement efficiency which will facilitate this, as noted elsewhere in this report.

7.3 Development challenges

The HLOS statement of outputs and funding was published in July 2007. Development of projects in response has progressed considerably since then, but a majority are still in relatively early stages of development. On average, the HLOS projects have progressed by just over one GRIP stage in

the last year. The current development status of the HLOS projects is summarised in Figure 8 below. This shows that some 75% of the HLOS projects have not yet reached GRIP stage 3, at which point the preferred option is identified, and hence scope becomes fixed. However, the larger projects have generally achieved a higher level of development, and hence by value this only represents around 33% of the HLOS projects, or circa £2bn of the overall enhancement portfolio.

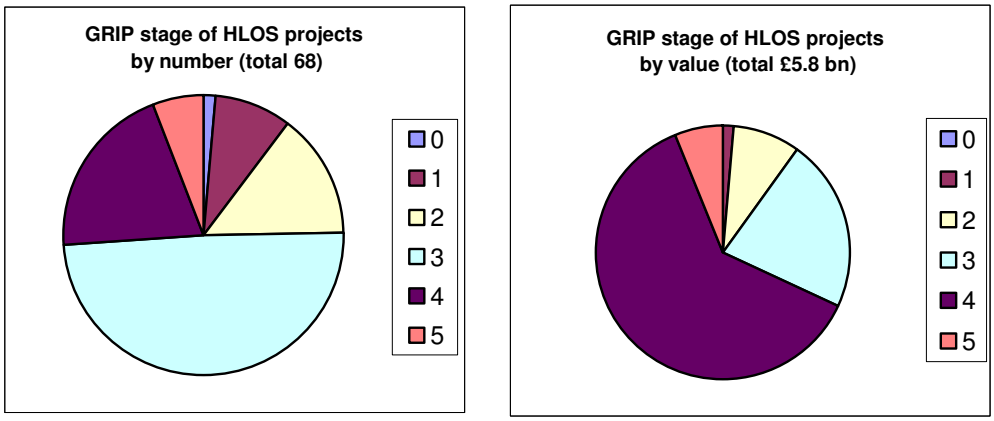

Figure 8: GRIP stage of HLOS Projects (currently in this stage)

This poses two particular challenges for Network Rail: the scale of development activity and the uncertainties remaining around scope and hence resources required. We will return to this in section 8 below.

Firstly, there remains a substantial amount of development and design work to complete before Network Rail can embark upon implementation. The specified projects are all reasonably well developed and are all currently in design or implementation. By contrast the majority of the projects developed in response to HLOS output targets are still in the earlier GRIP stages.

In the coming twelve months, Network Rail expects to progress at least 14 of the HLOS output projects to completion of GRIP stage 3, and at least another 11 to completion of GRIP stage 4. We believe that this is a necessary pace of progress to ensure that the focus can move on to implementation planning, design and delivery. However, the scale of this challenge should not be underestimated, given that only 4 of these 68 projects have reached completion of GRIP stage 4 to date. This will place a stretch on the internal development, engineering and management resources, but also upon Network Rail's governance and procurement processes.

Secondly, the implication of the development status is that the scopes of the projects remain uncertain. Only once projects have completed GRIP stage 3 are scopes identified fully, and only after GRIP stage 4 and approvals are secured are these confirmed and the phasing of resource requirements determined. Prior to this it is possible to make assumptions for planning purposes, but these will be subject to change. Across the whole portfolio it is possible to make a reasonable assessment which should prove reasonably reliable, but this may later change in relation to specific requirements on particular projects. Only once these projects have completed GRIP stage 4 and

resources identified can the delivery plans be considered robust. **We recommend that Network Rail monitors this closely such that there is early warning of any material change in critical resource requirements.**

7.4 Forward plans - specific project issues

7.4.1 Thameslink

The Thameslink programme is forecast to spend £286m in 2008/9; notably less than the originally budgeted £359m[i]. This partially reflects a decision taken in the summer of 2008 to defer the completion of Key Output 0 by three months to 22 March 2009, as well as some efficiency and property acquisition deferrals. This has had some knock-on consequences for the programme of works in 2009/10, resulting in a significant change in the funding profile compared with that previously assumed and advised in the Strategic Business Plan update. Network Rail now forecasts to spend £540m in 2009/10 compared with £684m forecast in the SBP.

Key Output 0 is a significant enabler to the subsequent works as it facilitates access to Blackfriars bridge to enable structural works and the installation of additional platforms. The key elements of work remaining are the installation of a new footbridge at Farringdon and the construction of a new access staircase at Blackfriars. These are not without risk, but are understood to be proceeding to the new schedule. Should these be delayed there is the potential for deferral of the Easter long-weekend works to a subsequent bank holiday, so the overall schedule impact is manageable, and the likelihood of this deferral is low.

The Thameslink programme has made significant steps in establishing its capability for delivery. It has now recruited some 350 staff supplemented by 120 agency personnel. This is a much higher agency ratio than elsewhere, and demonstrates flexibility of policy in response to the importance of rapid mobilisation. Although the programme expects to recruit a further 100 or so permanent personnel in the next year, the current economic climate is assisting, and the challenges are considered to be more about the quality of staff recruited into key roles rather than the volume. Process development has focused on establishing robust authorisation control and change management, learning lessons and transferring best practice from the West Coast project. All main suppliers are appointed for Key Output 1 works and there are no critical resource concerns. Track and Signalling work-streams will draw upon the management capability established within the renewals programmes.

There are several key risks in relation to works planned for 2009/10. One concerns the achievement of a signalling system technology selection milestone in summer 2009. This would not impact the immediate delivery of Key Output 1 in 2012, but might affect Key Output 2. Others relate to asset condition risks and funding and planning approvals for outer station works. However none of these are considered very significant in terms of overall schedule.

7.4.2 Airdrie – Bathgate

Detailed design of this project is well underway, with many implementation contracts let, or at tender stage according to the November 2008 plan. Disruptive access has been booked and the forward schedule looks realistic. Our assessment of expenditure in Annex C is based upon the cost loaded schedule supplied by NR. On the basis of our high level review we have no particular reason to doubt the planned achievement of project outputs by September 2010, although we have not sought to verify progress with the project team.

7.4.3 Birmingham New Street

This major project is currently in GRIP stage 5. The schedule for next year appears to have slipped slightly from that published previously to ORR, when GRIP 5 was forecast to complete in August 2009; this is now forecast as December 2009. We note that the funding profile supplied to us by Network Rail allows for income significantly in advance of expenditure with funding from a number of sources. As such it is difficult for us to reconcile the current forecast for £42m expenditure in 2008/9 with the original determination funding assumption. We note that the programme is under ongoing review to refine the sequence, increase programme security, reduce disruption and the potential for disruption and to reduce costs. The current forecast completion date is January 2015.

7.4.4 Reading Redevelopment

There has been good recent progress in development of this project, with Transport and Works Act consultation in progress. The overall project plans appear credible, although Network Rail's own peer project review in October 2008 identified a need to review timescales allowed for securing planning approvals, and the desirability of securing additional contingent possessions. The project schedule suggests that activity in 2009/10 will primarily be GRIP stage 4 activity. The separate tender schedule that we have seen suggests around £30-£40m of design and implementation activity is likely in 2009/10, and we have based our assessment of £50m in Annex C upon this, with an allowance for internal and development activity. Consequently we think it unlikely that the previously forecast expenditure of £81m in 2009/10 will be achieved. However, this does not necessarily place the overall output completion by July 2015 at risk.

7.4.5 Bletchley - Milton Keynes

This project is reported as being in GRIP stage 2. The project schedule which we have received only covers the development up to the end of GRIP stage 3, which is due to be completed in May 2009. At this point internal responsibility will transfer to the Signalling, Power and Communications Programme. We are surprised that it has not been possible to supply an overall implementation schedule. We have however also reviewed the information contained within the draft Delivery Plan, which suggests that GRIP stage 4 will be completed in Quarter 3 2009 and GRIP stage 5 in Quarter 3 2010. This appears quite a tight schedule for a relatively large project. The Draft Delivery Plan

also states completion is expected in 2012/13, somewhat later than the previous SBP forecast of 2011.

Based upon the current status and development plan, it seems unlikely that the project will achieve the cost profile assumed in the Determination. We have made a very indicative assessment of likely expenditure in Annex C, based upon the typical percentage of costs incurred on GRIP stage 3 and 4 activity, in the absence of more detail from Network Rail.

7.4.6 Kings Cross

The project is well advanced with most elements having completed design and implementation works underway. The schedule appears broadly consistent with the previous expenditure forecast of £61m in 2009/10, and although we have not undertaken a detailed review of project risks, we have no particular reason to doubt the completion of the project as planned, with the majority of works completed in 2011, and the remaining Southern Square reconfiguration after the Olympics in 2013.

7.4.7 Intercity Express

This programme is still at a relatively early level of development, with most elements still in GRIP stage 3. Activity planned in 2009/10 is predominately completion of GRIP 3 and the first part of GRIP 4. The cost loaded schedule supplied by Network Rail suggests that expenditure of circa £10m will be incurred in 2009/10, whereas Network Rail's previous forecast was for £40m. This does not necessarily place the overall schedule and delivery of outputs by 2015 at risk. However, we note that Network Rail acknowledges that further development work is required to confirm the scope and to establish whether work on Selective Door Operation, Bridge Resonances and Aerodynamics is required. In advance of this it remains to be confirmed that the outputs required by the rolling stock strategy can be achieved to required timescales.

7.4.8 ECML Capacity

This project is also still at a relatively early stage of development. The outline schedule for the project indicates that activity in 2009/10 will be entirely GRIP stage 3, which is due for completion in Quarter 2 2010, with a cost loaded plan supplied by Network Rail indicating circa £4m. This is substantially less than the previously forecast expenditure of £30m in 2009/10. We have seen only a very high level schedule, and have therefore not been in any position to judge the deliverability of this project by Quarter 1 2014 as proposed. However, there is still significant uncertainty about the scope of the project, and in particular the need for a grade separated junction which may require a TWA. Network Rail acknowledges that this may delay the overall delivery of the project.

7.4.9 West Coast Power Supply

Although requested, we have not been able to secure a project schedule or status information for this project at the time of our report. In Annex C we have assumed expenditure as provided for in the Determination. Based upon the draft CP4 Delivery Plan we understand that this project is currently in GRIP stage 4. Detailed design (GRIP stage 5) is expected to be completed in 2009, with construction due to commence in 2010, but not due to complete in stages until CP5. Without further detail of schedule it has not been possible to comment on the realism of this.

7.4.10 Cotswolds Line Redoubling

The project has been set a fairly demanding schedule, given that it is currently in GRIP stage 4, with the intention of utilising a major blockade in the summer of 2009. However, there is understood to be strong support from First Great Western, which will facilitate securing of further disruptive access, and the overall schedule for completion by end of 2010 appears feasible, although even this is a little later than First Great Western have sought. Our assessment of expenditure in Annex C is based upon the cost loaded schedule supplied by Network Rail.

7.4.11 Ten Car South West Suburban Railway

This is a complex programme of works, with two main tranches and 12 sub-projects. Although the physical works are in the main individually straightforward, securing all of the necessary approvals and access may make the project more challenging. The 2009/10 programme is primarily concerned with GRIP 4 activity on six sub-projects and some detailed design activity on the others. As a result it seems unlikely that the previous forecast of £17m will be achieved, and indeed the latest cost loaded schedule supplied by Network Rail suggests a figure of £10m. Overall completion is scheduled for 2013. However, the need to also complete associated power supply upgrade works may place this at risk, as this element is not scheduled for completion until 2015.

7.4.12 East Coast Mainline overhead line enhancement

This project is still in relatively early stages, with its status reported as in GRIP 2 in October 2008. Full asset condition surveys are still to take place, and these will dictate the detailed scope. It would appear that the works are likely to be relatively straightforward, and the challenges are likely to be mainly with completing design at many locations and managing logistics. Nonetheless the current schedule which suggests that the project will achieve GRIP stage 4 by April 2009 appears optimistic. Even if this is achieved, the schedule does not anticipate Design and Build contract awards until early 2010, and the cost loaded schedule supplied by Network Rail suggests that expenditure of around £3m is likely in 2009/10, which is well below the previously forecast £17m. Despite this the nature of the works means that it should still prove feasible to complete the project by the end of 2011 as planned.

7.4.13 Suburban area 10-car operations to Victoria and London Bridge

We have only seen a very high level schedule for this project. This suggests that the activity in 2009/10 extends only to GRIP stage 4 development. The cost loaded schedule supplied by Network Rail indicates expenditure of circa £2m in 2009/10, well below the previous forecast of £15m. The draft CP4 Delivery Plan identifies that works will be required at 45 separate stations. This includes a number of locations at which track and signalling works are likely to be required, and the possibility of land acquisition which may necessitate TWA powers, although the scope will not be clear until completion of GRIP stage 3 in spring 2009. The strategy for adopting SDO in order to minimise the physical works required is also still under investigation. The above demonstrates a large number of risks to overall completion which is currently assumed to be in 2013/14. In addition, the associated power supply enhancements on this route are not scheduled for completion until 2015.

7.4.14 West Coast: Stafford/ Colwich remodelling

This large project is currently in GRIP stage 2. As such scope is still considerable uncertain, with a number of alternative options being considered. The current schedule suggests that 2009/10 will only involve GRIP stage 3 activity. This being the case it seems unlikely that it will achieve the previously forecast £14m in 2009/10, and in Annex C we have assumed 3% of the total project value, or £10m. However, this rate of activity is consistent with the overall project schedule, which does not anticipate TWA order submission until Quarter 2 2012, and overall completion in 2017.

7.4.15 North London Line capacity enhancement

This project is currently in GRIP stage 5, with completion of detailed design forecast for Quarter 1 2009. The schedule anticipates design work and the commencement of construction in 2009/10, leading to 50% of the CP4 funding being spent. Our assessment of expenditure in Annex C is based upon the cost loaded schedule supplied by Network Rail. We believe that the schedule looks credible and have no reason to doubt the overall completion by Quarter 4 2011.

7.4.16 Glasgow Airport rail link

This project is currently in GRIP stage 4. Activity in 2009/10 will complete GRIP 4, and mainly involve detailed design, with some early site works on signalling commencing. Our assessment of expenditure in Annex C is based upon the cost loaded schedule supplied by Network Rail. We believe that the schedule appears credible and consistent with the previously assumed expenditure profile.

7.4.17 Glasgow to Kilmarnock

This project is on site already, with disruptive access booked, the main contracts let, and therefore there appears to be a high probability of completion in 2009/10 as planned. Our assessment of expenditure in Annex C is based upon the cost loaded schedule supplied by Network Rail.

7.4.18 Midland Mainline: St Pancras - Sheffield line speed improvements

This project is at an early stage of development (currently in GRIP 2) and we have only seen a high level schedule. The schedule suggests that activity in 2009/10 will be primarily GRIP 3, with the early part of GRIP 4. Based upon this it seems unlikely that the previous forecast of £10m (representing 18% of project cost) will be achieved in 2009/10. In Annex C we have assumed 4% of total project cost or £2m. However, the draft CP4 Delivery Plan somewhat contradicts the schedule which we have seen, as it envisages GRIP stage 4 being completed in Quarter 1 2009 and physical works underway in conjunction with the High Output Ballast Cleaning programme also in 2009. If this is the case, then higher levels of expenditure in line with the Determination are feasible. Without access to further detail of schedule it is difficult to determine whether the overall schedule which anticipates completion in 2015 is credible, or indeed overly cautious.

7.4.19 York Holgate junction 4th line

Train operators have been relatively critical of the protracted development of this project, and are concerned about potential de-scoping. We understand that it is currently undergoing a significant internal review and as such a project schedule has not been available to allow us to make an assessment of deliverability. However, we note from the high level schedule previously supplied, that it would seem unlikely that this project will be completed in 2009/10 as originally envisaged. The draft CP4 Delivery Plan in fact proposes stage 4 activity only in 2009, with overall completion in Quarter 4 20011. Based upon this our cost forecast in Annex C assumes just 10% of the overall project cost.

7.5 Overall assessment

The table in Annex C summarises our findings in terms of likely delivery expenditure across the entire top 19 spend projects discussed above. We have largely based our assessment upon Network Rail's own cost loaded schedules, although in a few cases where these were not made available to us, we have applied a percentage approach based upon forecast GRIP stages, as indicated in the notes to the table in Annex C. In total, we forecast that the expenditure achieved on these projects is likely to fall short of that assumed at the time of the Determination, by some £400m or 25%. We are not in a position to make a similar assessment for the other smaller projects, although it seems likely that these will have generally had rather less management attention than the large projects, and are therefore more likely to be subject to slippage.

Although this does not give immediate cause for concern about the profile of delivery of outputs, there is some risk that this will lead to back-end loading of the overall enhancement expenditure profile in CP4, if all outputs are to be delivered. We have not yet been provided with Network Rail's own overall capital expenditure forecast for CP4, as this is currently subject to phasing review as mentioned in section 3 for renewals. It will also be generated for enhancements as part of the current work underway on the Delivery Plan. The original profile at the time of the SBP update was subject to an early peak in 2009/10 and 2010/11, and so it seems likely that this re-phasing will have produced a somewhat flatter profile.

7.6 Generic risks and Network Rail's management approach

A number of generic risks to the programme may be identified:

- Securing planning approvals and network change, etc
- Interoperability & ROGs approvals
- Availability of critical resources
- Access plans and the 7 Day railway.

Network Rail has advised us that it will expect to monitor the securing of planning approvals as part of its approach to milestone monitoring. It has also advised that it is establishing a national centre of excellence in relation to TWA and planning approvals and this should help in securing approvals predictably.

Network Rail has advised that it expects very few projects to require Interoperability approvals. It is also putting effort into training staff in the requirements of ROGs submissions, although the large volume of projects requiring this may still potentially create a design bottleneck.

We have discussed the positive progress being made in relation to critical resource management processes under section 5.4.3 above, although we also noted that this important process was still underway for the CP4 Delivery Plan.

It would appear that those larger projects discussed in section 7.3 above requiring disruptive access have this planned; in the time available we have been unable to verify the possession adequacy or status. The 7 day railway will in due course place more demanding constraints upon the availability of access. However it is not envisaged that this will impact until later in the control period, by which time productivity improvements will be expected to allow a reduction in the required access.

8. Draft CP4 Delivery Plan

In line with our remit we have reviewed the "CP4 Delivery Plan – enhancement programme – draft statement of outputs and milestones", in order to assess the extent to which the capability plans are aligned with this. We have addressed this question to some extent already, especially in sections 5 (Network Rail's Capability Development Programme) and 7.3 (Development Challenges).

The above document provides a summary of the various enhancement outputs, projects and programmes which Network Rail plans to deliver and some detail at individual project level. It is clear from this that there are some significant demands in relation to particular types of work and associated capability which will be required to support these. For instance, many of the HLOS projects are identified as requiring track, signalling and power supply works. The resources required to design, build and test these are recognised by Network Rail as the scarcest.

The document has not however provided an overall assessment of the demand across all programmes of work, and without this it is difficult to ascertain quantitatively whether the capability development is adequate to meet the future requirements. We therefore requested sight of the output from the critical resource planning process in relation to the latest capital programme planning for CP4. We have been advised that this process is still in progress, such that whilst overall capital plans have been approved, the detailed resource assessment is still to take place. It is concerning that this data is not more readily available, and that the resourcing analysis has not apparently been used to drive the approval of the capital plan. **We believe that this should be given further attention before the Delivery Plan is published.**

Nonetheless, we have achieved a broad understanding of the scope and phasing of the CP4 capital programme, and our findings and comments in sections 5 and 7 should therefore be taken as also reflecting our views on the extent to which capability development is aligned with this.

We note that a number of the projects previously understood to be targeted for completion in CP4 now have proposed completion dates in CP5. Examples of this are:

- Route 2: Suburban area 10 car operation to Victoria and London Bridge
- Route 1, 2 and 3 power supply upgrades
- Route 8 ECML upgrade projects
- Capacity improvements in the Leeds Area
- Route 20 platform lengthening
- Salford Crescent station redevelopment
- Barry – Cardiff Queen St Corridor

In view of this it seems unlikely that a number of the HLOS outputs will be achieved in CP4. In addition a substantial number of the projects are scheduled to be completed in the last year of CP4, and it is therefore unlikely that these outputs will be available to provide enhanced capability for timetable changes within CP4.

9. Key findings and issues

9.1 Capability development

9.1.1 Internal resources

There is still a significant internal vacancy gap, and even with the beneficial impact of the economic downturn, it seems likely that this will remain for some time, especially as Network Rail has recently increased its internal resource demand forecast for CP4. Nonetheless there is no evidence that this is directly impacting current delivery. We note that Network Rail is progressing a number of longer term resource development initiatives, which are commendable.

In the short term, a focus on improving project management productivity is more likely to yield benefits. The development of the Matrix Management concept and the functional Resource Manager role is a good step forward, and we believe that with clearer targeting and monitoring of benefits this can have a significant impact. The relatively weak progress with the Programme Management functional improvement plans suggests that these may lack priority and focus, and may bear review in relation to the overall capability development strategy.

9.1.2 Skills

The project management Capability Maturity model appears to have lost profile and is not being used to its full potential to direct process and training improvements; we consider that this is a missed opportunity. Network Rail needs to take care to manage improved performance and not just the scores. For instance the model suggests that scope management and project control are relative weaknesses in Enhancements, with both having declined in the past year, but there is not an apparent focus on developing capability in this area.

Train operators have indicated concerns at a lack of Network Rail Sponsorship capability and operational input to develop practical solutions. Apparently simple projects are frequently made complex, and there is reported to be a lack of leadership and willingness to take project decisions without reference upwards, so that projects take a lot longer than they should. However, we note that Network Rail has substantially increased its sponsorship resources in the past year, and now have a structured competency assessment and training and development programme. NR recognises that capability is still maturing in this area and is seeking to promote best practice and drive consistency. We believe that this investment could be maximised, for customer benefit, with further focus on behaviours as noted below.

9.1.3 Organisation and behaviours

The significant investment which Network Rail has made in leadership skills training has not yet been translated into a noticeable change in delivery behaviour. This results, from a customer viewpoint, in an inclination to hide behind process, except when Network Rail's top leadership get directly involved. **We suggest that more emphasis may need to be placed upon behavioural aspects of training for both project management and sponsorship resources.**

9.1.4 Processes

The widespread adoption of the Fast-track GRIP development process has had a positive impact in that it provides early clarity to potential sponsors and funders of the viability of projects. This will also ensure that development resource is put to the most productive use. However the lack of subsequent project implementation progress would appear to suggest that the fast-track approach may simply have replaced one early development bottleneck with a subsequent one.

Network Rail has implemented a peer review process to help to assure deliverability at project level, as well as providing a further mechanism for continuous improvement. This is a good step, and we suggest that this should form a key component of assuring delivery of the CP4 enhancement programme. The current review plan applies to the 24 largest renewal and enhancement projects and **we suggest that this should be further enhanced by applying also to medium scale HLOS enhancements. We would also encourage the involvement of project sponsors in these reviews, so that the customer perspective is more fully considered.**

9.1.5 External resources

It is evident that Network Rail and the external rail supply industry have made real progress in relation to supply chain strategy and engagement. The development of an overall engagement model and measurement framework and the improvements in critical resource management are of particular note. Nevertheless, this progress needs to be sustained as more of the work for the CP4 capital programme is procured, in particular through sharing the critical resource planning information proactively with suppliers and maintaining stable delivery of tenders to published schedules.

9.1.6 Overall Capability programme

Although Network Rail is commendably progressing many initiatives across the whole breadth of its capability requirements, it does not appear to us that this contains all of the elements of an overall capability development programme, consistent with good practice. We have not seen an overall statement of purpose and objectives, or an integrated description of strategy. The numerous initiatives are not as joined up as they could be to obtain maximum benefit. The accountability and

leadership for capability development is not entirely clear. We think that, by addressing these aspects, Network Rail could optimise the use of its resources, improve stakeholder communication and increase assurance in delivering its CP4 capital programme.

9.2 Progress monitoring

Network Rail do not yet appear to have established systematic monitoring of development progress for the national CP4 enhancement portfolio. It has briefed us on its plans to establish a milestone monitoring process for key projects, but this appears internally focussed and progress has been relatively slow. It appears that Network Rail has not yet decided exactly what milestones are important and we have not seen much evidence of an attempt to agree the format for this monitoring with its customers, funders, or with ORR. Train operators and funders have also expressed concerns about a lack of visibility of progress and delivery plans. Consequently, the internal milestone monitoring which is taking place lacks transparency to customers, funders and ORR.

We note that the project plans element of the CP4 Delivery Plan will be an important step forward in respect of establishing an initial baseline. The drafts which Network Rail has published contain development milestones in some cases, but these are not consistently defined, and do not therefore provide adequate certainty of development commitments. We understand that there was no requirement upon Network Rail for these to contain any cost information although NR is required to provide it in the part 2 Plan to be issued in March. We believe that this is important as it will provide a helpful proxy for development and delivery progress, as well as providing a reference for subsequent change control.

We recommend that project development milestone monitoring to meet the reasonable requirements of customers and funders is implemented by the start of CP4.

9.3 Capability to deliver the 2009/10 enhancements

In general there has been reasonable progress with both physical development and development of capability for the Major Projects, such that, within the limitations of our review, we have no significant concerns about their delivery in line with stated plans. This has not been matched by progress on some of the smaller projects. Project plans have in many cases been rescheduled from those published earlier in the year, such that delivery in line with the latest 2009/10 plans appears credible. However, in most cases this is at the expense of the overall delivery dates having slipped towards the back-end of CP4. We believe that this is generally still in line with the stated HLOS targets, although in some cases the plan indicates delivery completion in CP5, and the draft Delivery Plan is therefore not clear on whether HLOS will be met in all cases.

There is a potential interaction with the efficiency targets, as these may result in extended development iterations and procurement process, delaying resultant delivery. We have seen evidence of this in relation to the 2008/9 delivery and the planned re-phasing of renewals

expenditure from 2009/10. Network Rail has told us that this has also caused delay in some cases to the development of the CP4 enhancements. Conversely initiatives which offer improvements in productivity should assist with deliverability. Centres of excellence are being established for the development and delivery of different types of enhancement activity, such as platform lengthening and power supply works, and these will help to ensure efficient use of management resource and efficient design. The initiatives promoted primarily to deliver renewals economies, such as modular S&C and signalling design simplification and design for ease of testing, should all offer benefits to enhancement delivery. This will be facilitated with the increasing use of renewals supply chains to deliver enhancement projects, as noted in section 5.5.2.

9.4 Safety

We have no reason to conclude that the issues identified in this report need have any adverse impact upon safe delivery. Indeed, we acknowledge that in a number of cases the process changes which have been made, such as the management of critical resources, and the planning and control of site construction activity should contribute to positive improvements in construction safety.

10. Recommendations

We acknowledge the substantial amount of capability development activity which Network Rail is undertaking, and also the considerable effort going into the development of enhancement projects. We have identified in our report a number of actions which need not entail substantial additional effort, but will ensure that the resources currently deployed have maximum impact.

We summarise our key recommendations below. These will help to provide increased confidence of the delivery of the CP4 capital programme to ORR and the industry and also help to provide a greater degree of clarity to customers and funders of what will be delivered and when.

We have framed our recommendations in relation to the specific elements of our remit, as indicated by the main headings below. The recommendations relating to supply chain engagement, critical resource management and rolling stock strategy all seek to address key capability risks.

We envisage that each of these recommendations would be the responsibility of Network Rail to implement.

The text in **bold** forms the expected action, with the following text providing supporting explanation as appropriate.

Overall capability development programme

1. **Define in the CP4 Delivery Plan a capability development strategy and master roadmap, with clear targets.** This should address internal and external resourcing and competency, organisation, project and programme management processes. This will provide overall capability direction and build confidence within the industry (section 5.7).

2. **Implement the capability development programme in an integrated manner, identifying and proactively managing the key interdependencies.** For examples of this see section 5.7.

3. **Clarify the accountability for, and leadership of, capability development.** This will help to ensure focus on the correct priorities, consistency and that sufficient resources are committed for delivery (section 5.7).

4. **Broaden the existing capability maturity model to embrace programme management.** Programme management challenges are critical to CP4 delivery and this should address aspects such as project prioritisation, resource deployment, interdependency management and programme risk and issue management (section 5.7).

5. **Focus on developing behavioural as well as knowledge based competencies in both sponsorship and project management.** We believe that this will more directly address the concerns of customers in relation to the development and delivery of projects (section 5.2.5).

Project development progress monitoring

6. **Implement project development milestone monitoring, with at least quarterly reporting, to meet the reasonable requirements of customers and funders, from the start of CP4.** The reasonable requirements of customers and funders should be established through consultation. This monitoring should include a core set of standard development milestones, linked to the CP4 Delivery Plan, thereby ensuring transparency to customers and funders (section 6).

7. **Consult the affected TOCs and FOCs consistently and formally on the GRIP stage 3 and GRIP stage 4 outputs for HLOS projects as these are developed.** Lead operators for each output are analogous to project funders and should be fully consulted (section 6).

Supply chain engagement and critical resource management

8. **Refine and embed the critical resource management process to ensure that this is fully effective from the start of CP4** (section 5.5.3).

9. **Ensure that demand forecasts for all critical resources flow from a single master capital plan, which is subject to robust change control** (section 5.5.3).

10. **Broaden the sharing of critical resource planning information with the supply chain to cover all areas of scarce resource.** This will assist the supply chain to target further development and improved utilisation of their resources (sections 5.6.1 and 5.5.3).

11. **Ensure that tender schedules are proactively shared and frequently updated, consistently across all supply categories. Ensure that the tenders are then delivered to planned timescales** (section 5.5.4).

Rolling stock strategy

12. **Define more explicitly the service plan and rolling stock assumptions for each project within the CP4 Delivery Plan.** The service plan should identify at least the levels of peak and off-peak capacity to be provided, and the timetable period for which the enhanced capability is intended to be provided. Rolling stock assumptions should include train lengths and fleet types or equivalents where new vehicles are being procured. This will ensure alignment across the overall HLOS programme, and provide a clear baseline for any subsequent changes (section 5.6.2).

Abbreviations

APM	Association for Project Management
BNS	Birmingham New Street
CP	Control Period
C&P	Contracts and Procurement
CMM	Capability Maturity Model
DfT	Department for Transport
ECML	East Coast Mainline
E&P	Electrification and Plant
FIP	Functional Improvement Plan
FIT	Functional Improvement Team
FOC	Freight Operating Company
FY	Financial Year
GARL	Glasgow Airport Rail Link
GRIP	Guide to Railway Investment Projects
HLOS	High Level Output Statement
HSQE	Health, Safety, Quality and Environment
IEP	Intercity Express Programme
II	Infrastructure Investment Directorate
IIE	Infrastructure Investment Enhancements
IPD	Improving Project Delivery
NR	Network Rail
NSIP	National Stations Improvement Programme
OLE	Overhead Line Electrification
ORR	Office of Rail Regulation
P3E	Primavera Enterprise
RIA	Railway Industry Association
ROGS	Railways and Other Guided Systems regulations
SOP	Sales and Operations Planning
TNA	Training Needs Assessment
TOC	Train Operating Company
TS	Transport Scotland
TWA	Transport and Works Act
UK	United Kingdom

Annex A

Terms of Reference

Further review of Network Rail's capability to deliver the CP4 capital investment programme

Objectives of study

To establish what progress Network Rail has made on addressing the two specific requirements on capability which ORR set out in its draft determinations:

- development of an overall capability development programme
- progress reports on enhancement project development milestones for ORR to monitor.

To review Network Rail's capability to deliver the proposed first year (2009-10) enhancement outputs

To review the enhancements part of Network Rail's draft CP4 delivery plan (due to be provided to ORR by Christmas 2008) in the light of (1) and (2) above and advise on whether the delivery plan is consistent with Network Rail's capability development plans

To make recommendations on what further capability development is required to give a high degree of assurance to ORR that the delivery plan can actually be delivered.

The focus will be on the enhancement programme, while taking into account the renewals programme. The definition of capability, in terms of meaning and factors involved, will be that used in the earlier Nichols study.

Background

Nichols undertook a short review of Network Rail's capability in April 2008 and made recommendations to ORR. These recommendations were conisdered in ORR's PR08 draft determinations published in June 2008. We said that we required Network Rail to follow up two of the Nichols recommendations:

- development of an overall capability development programme
- progress reports on enhancement project development milestones for ORR to monitor.

In our final determination published on 30 October we noted our doubts about Network Rail's progress. We also noted that we had asked the company to provide further information, particularly on 2009-10 plans, to address some of our concerns.

Although information on both recommendations and 2009-10 plans was provided, it was incomplete and in certain areas did not appear to be robust.

Because of our continued concerns about Network Rail's capability we reprofiled Network Rail's enhancement expenditure. For example, we did not believe that Network Rail could deliver any of the planned £32m of works for the 'seven day' railway project.

Deliverables

A Draft report to address objectives 1 and 2 by 18 Dec.

B Draft report to address objectives 3 and 4 within one month of receipt of the delivery plan, together with any required updates on A. This report will then constitute the draft final report for the whole project.

Each draft report is to be turned into a final report and supplied to us within one week of receiving comments from us.

This is a high profile study in an important area. We plan to publish the final report.

Cost

Project is time and materials to a cap.

We expect the project to require around 50 person days (assuming a mix of staff inputs) of resources, given the scope of the work and the data to be analysed.

Further information

The successful tenderer will be supplied with information which ORR has received from Network Rail in the period since publication of the draft determinations.

The original Nichols report and full documentation for our PR08 work is on our website.

The work will require close working with Network Rail and discussions with train operators.

Contact

Questions on the specification should be put to John Larkinson (0207 282 2193)

Annex B

People interviewed as part of review

Name	Organisation	Title	Date
Peter Loosley	Railway Industry Association	Policy Director	17/11/08
Jeremy Candfield	Railway Industry Association	Director General	23/01/09
Malcolm Pheasey	National Express Group	Rail Development Director	1/12/08
Jim Morgan	First Group	Passenger Business Development Director	3/12/08
Calvin Lloyd	Network Rail	Strategic Planning Manager	3/12/08 22/01/09
Martin Cunningham	Network Rail	Acting Director of Programme Management	7/12/08, 11/12/08, 12/01/09, 22/01/09
Ian Hodgins	Network Rail	Project Controller, Enhancements	7/12/08, 9/12/08, 10/12/08, 22/01/09
Richard Wales	Network Rail	Programme Engineering Manager, Enhancements	10/12/08
Bill Reeve	Transport Scotland	Director, Rail Delivery	3/12/08
Michael Hurn	Department for Transport	Director of Projects	5/12/08
Paul Rodgers	Department for Transport	HLOS Programme Director	10/12/08
Paul Mansbridge	Department for Transport	HLOS Programme Manager	10/12/08
Andy Mitchell	Network Rail	Programme Director, Thameslink	12/12/08
Ian Simpson	Network Rail	Programme Controller, Thameslink	12/12/08
Ian Ballentine	Network Rail	Director, Contracts & Procurement	12/12/08
Neil Carruthers	Network Rail	Head of Contracts and Procurement, Enhancements	12/12/08

Roger Cobbe	Arriva UK Trains Limited	Policy Director	16/12/08
Barbara Barnes	Network Rail	Head of Customer Services	19/12/08, 20/01/09
Richard Eccles	Network Rail	Head of Route Planning	19/01/09
Ian Brown	Network Rail	Enhancement Support Coordinator	20/01/09
Roger Dickinson	Network Rail	Programme Director, Enhancements	20/01/09

Annex C

Details of top 19 spending enhancement projects in 2009/10

Delivery Plan Reference	Programme / Project name	Determination Funding CP4 Total (£m)	Determination phasing assumption 2009-10 (£m)	Nichols assessment of likely spend in 2009/10 (£m)	Basis of Nichols assessment of likely spend (see Key below)	Current GRIP Stage at Sep 08 (in stage)	Current GRIP Stage at Dec 08 (in stage)
11	Thameslink	2,700	684	540	a	6	4 to 6
32.01	Airdrie - Bathgate	189	128	128	a	5	5 to 6
14	Birmingham New Street gateway project	450*	101	42	a	5	5
13.02	Reading area redevelopment	448	81	50	c	3	4
10.01	West Coast: Bletchley - Milton Keynes	107	79	10	b	6	2
9	King's Cross	167	61	61	d	5	4 to 6
12	Intercity express programme	260	40	10	a	3	3
18.01	Capacity relief to the East Coast Main Line (joint line)	233	30	4	a	1	3
10.02	West Coast: power supply upgrade	235	22	22	d	4	N/A
26.02	Cotswold Line re-doubling options	48	20	25	a	4	4
15.04	10 Car South West suburban railway	78	17	10	a	2 to 4	3 to 4
19	East Coast Mainline overhead line enhancement	30	17	3	a	2	3
15.06	Suburban area 10-car operations to Victoria and London Bridge	65	15	2	a	2 to 3	2
10.03	West Coast: Stafford / Colwich remodelling	364	14	10	b	2	2
27	North London Line capacity enhancement	28	14	14	a	4	5
32.02	Glasgow Airport rail link	146	15	15	a	4	4 to 6
32.04	Glasgow to Kilmarnock	14	14	14	a	5	5 to 6
20	Midland Mainline St Pancras - Sheffield line speed improvements	55	10	2	b	4	3 to 4
18.09	York Holgate junction 4th line	10	10	10	d	5	N/A

Total top 19	5,178	1,372	972
Top 19 as % Determination enhancements	70.0%	88.5%	
Total all Determination Enhancements (excl risk)	7,396	1,550	
Top 19 as % all enhancements	47.4%	65.3%	
Total all enhancements (to be confirmed by NR)	10,920	2,100	

KEY: **Basis of Nichols assessment of likely expenditure in 2009/10**

*full CP4 funding all sources

a: cost loaded schedules supplied by Network Rail
b: percentage allocation of forecast total project cost, based upon GRIP stages
c: forward tender schedule supplied by Network Rail, plus percentage allocation based upon GRIP stages
d: as assumed in Determination in absence of other detailed information

Annex D

Reference sources

[i] Rapid Review of Network Rail's Capability to Deliver its increased programme of enhancements, The Nichols Group, April 2008

[ii] Periodic Review 2008, Draft Determinations, ORR, June 2008

[iii] Periodic Review 2008, Determination of Network Rail's Outputs and Funding for 2009-2014, ORR, October 2008

[iv] CP4 Delivery Plan, Enhancements Programme: draft statement of outputs and milestones, Network Rail, December 2008

[v] II Enhancements Period 8 MBR Pack, Network Rail, 27 November 2008

[vi] HM Revenue & Customs' transformation programme; July 2008; ISBN: **9780102954241**
HSE Transformation Programme 2007-10; 2006; ISBN: 0948562684

[vii] Data supplied by Network Rail – Reference Nic1.009 - Agency vs Staff – Headcount P8

[viii] Data supplied by Network Rail - Reference Nic1.010 – Turnover Rate

[ix] Data supplied by Network Rail - Reference Nic1.008 – No of attendees per course

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[xi] Data supplied by Network Rail - Reference Nic1.014 – Proj Mgt Training Catalogue

[xii] NRL2AMGO11 – Route Requirement Management and Engineering Remit Production, Network Rail Standard, January 2009

[xiii] Data supplied by Network Rail - Reference Nic1.029 - FIP Period progress update - 21 November 2008.pdf

[xiv] Network Rail's Plan for Reviewing Project Delivery, June 2008

[xv] Rapid review of Network Rail's capability to deliver its increased programme of enhancements, April 2008

[xvi] Network Rail's Market Engagement Maturity Model – Figure 5 in 'Gateway 1, IIG Category Strategy (Category Name: Multi-Disciplinary Works)

[xvii] Data supplied by Network Rail - Reference Nic1.024 - INV010 Critical Resources Process Workouts.ppt, 20 November 2008

[xviii] Data supplied by Network Rail – Reference: Scotland SPM Prd08 0809 MBR.zip

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[xx] CP4 Plan Remit, Network Rail, 9 December 2008

[xxi] Network Rail monitor Q2 2008 – 09, ORR, November 2008