Network Rail's output framework for 2014-19

August 2012

OFFICE OF RAIL REGULATION

Contents

Executive summary

1. Our 2013 Periodic Review (PR13) covers the period 2014-19 (control period 5, CP5). It establishes what Network Rail must deliver for the funding it receives.

2. We have consulted extensively on different aspects of Network Rail's funding, including our consultation on financial issues[1]. This consultation sets out our proposals about delivery and the monitoring of delivery - Network Rail's output framework for CP5. By 'output framework' we mean the outputs which Network Rail will be required to deliver, monitoring indicators, and enablers (measures of Network Rail's capability to deliver). A failure to deliver an output is potentially a breach of Network Rail's licence, while a failure to deliver either an enabler or an indicator would not in itself be considered as a potential licence breach, although it might highlight wider problems which could themselves be a licence breach.

3. The output framework is a key part of PR13 and potentially affects all stakeholders. Essentially this consultation describes the basis for how we will hold Network Rail to account in CP5. We want to build on what has been achieved in the current control period (CP4), and we are looking for your views on how we can improve our approach.

4. The starting points for the output framework are the High Level Output Specifications (HLOSs) recently published by the Secretary of State and the Scottish Ministers. The Secretary of State set out requirements in terms of train service reliability (as measured by PPM and CaSL[2]), committed and new enhancement projects, capacity metrics and funds to meet certain objectives. The Scottish Ministers set out requirements in terms of PPM, committed and new enhancement projects and funds to meet certain objectives. Both HLOSs contained further requirements, for example to produce plans to tackle specific issues.

5. The Secretary of State and the Scottish Ministers have also recently issued new guidance to us, with some direct references to the HLOSs. The Secretary of State's guidance, for example, sets out how we should approach the value for money assessment for certain enhancement projects.

6. We need to decide how best to facilitate the delivery of the HLOSs, in which further areas we should set outputs, indicators and enablers, and what specific measures we should set in each area. We also need to decide how disaggregated the measures should be in terms of geography and time period, and the level at which the measures should be set.

[1] Consultation on financial issues for Network Rail in CP5: http://www.rail-reg.gov.uk/pr13/consultations/financial-issues.php

[2] PPM measures the percentage of passenger trains arriving at their final destination within 5 minutes, or 10 minutes for long distance services. CaSL refers to cancellations and significant lateness – a measure of the percentage of passenger trains that are cancelled or more than 30 minutes late.

7. In taking these decisions we are bearing in mind certain principles:

(a) We want to maximise the impacts on the outcomes we want to achieve: increased passenger and freight customer satisfaction, higher economic growth, better connectivity and better environmental sustainability;

(b) We have aimed to balance the competing criteria of creating a framework that is comprehensive but not unnecessarily complex, while also recognising that the more outputs we set the more risk Network Rail potentially faces (and hence the higher its costs may be);

(c) We want to give Network Rail and the industry flexibility to deliver in a way which maximises value for money;

(d) We want to adapt to Network Rail's devolution of its decision making to route level[3], with more route level monitoring (which in turn allows better benchmarking); and

(e) We want to consider where to strengthen the current framework, learning lessons from our experience of the current control period.

8. We have reviewed the available evidence in terms of:

(a) the responses we received to our May 2011 consultation questions on outputs[4];

(b) the proposals set out in the initial industry plan (IIP);

(c) a review by the reporter, Arup, of how effective the CP4 framework has been and options for a different approach in CP5; and

(d) our own assessment of the strengths and weaknesses of the existing measures and possible new measures.

9. In broad terms our proposal is to:

- Continue, as now, to set outputs across a **wide range of output areas** which matter to users. We considered significantly reducing the number of areas in which we set outputs in order to increase Network Rail's focus, but we believe that it is important to maintain pressure on Network Rail to improve delivery on all fronts that matter to passengers and freight customers. We have proposed removing a few existing outputs, to simplify the framework and increase clarity (for example, we are proposing not to supplement PPM outputs with delay minutes outputs, as we see the former as more important to customers).
- Only set high level outputs in each area of delivery, and beneath these measures **give the industry flexibility to set more detailed outputs** subject to our approval, which is consistent with our principle of where possible allowing the industry to take decisions (instead of government and the regulator).
- **Continue to focus outputs at the train operating company (TOC) level and not move to route based outputs**. TOC facing outputs are more meaningful to passengers and it could be confusing to have TOC and route based outputs (although we will monitor at the route level, see below).

[3] By 'route' we mean Network Rail's operating routes.

[4] Available at http://www.rail-reg.gov.uk/pr13/consultations/orr013.php

- Require Network Rail to set out **detailed milestones for the delivery of enhancement projects in a delivery plan**, as we did in CP4 – these will be the enhancements outputs. We will **improve the governance arrangements for funds** to increase the role of passengers and customers and improve transparency. We are also proposing to establish delivery milestones for critical renewals projects, and these will be outputs.
- Establish a **new measure to replace the existing freight delay minutes output**, which is not seen as being targeted at freight operators' or customers' priorities.
- Define **new monitoring indicators**, where possible based on the measures Network Rail uses itself, to reduce duplication. These indicators will help us and the industry to understand how outputs are being delivered. We will be putting a clearer focus on 'on the ground' measures such as renewals workbanks by route. Better monitoring of Network Rail's routes would also improve transparency.
- Continue to monitor the **safety management maturity enabler** (together with the **asset management excellence enabler**, as described below), and establish a **'system operator' enabler** to monitor this further key area of Network Rail's capability. In the area of **customer service**, we expect Network Rail to develop a methodology for measuring its customer service capability, to establish a forecast trajectory for CP5 and to implement a plan to achieve it.
- Establish new **environmental indicators**, including those required by the two HLOSs.
- Learn from the experience of CP4 to **improve the definition of existing measures** such as the station stewardship measure.
- **Strengthen the focus on further asset management improvements**. Excellence in asset management leads to better safety, higher efficiency and improved reliability – it unlocks wider improvements and that is why it is called an 'enabler'. As a result it is of prime importance to train operators and funders. Although 'asset management' is often used as a catch all phrase, how well Network Rail is doing as an asset manager can be measured in a number of ways:
    - In terms of capability, by the asset management excellence model and/or the PAS 55 standard;
    - In terms of the quality of the asset policies which set out how work on each asset has been prioritised (new asset policies are in development and will be in place by the start of the CP5), and then by their delivery in terms of maintenance and renewals work carried out;
    - By the quality of the information held about the assets;
    - By the condition of the assets;
    - By asset performance (e.g. how often an asset fails); and
    - By monitoring the delivery of projects designed to improve asset management.

  Network Rail's network licence has provisions on asset management and we monitor the company's performance, which we have been critical of[5]. Network Rail is committed to further improvements and is developing its own approach to reflect the greater devolution to the routes and the need for a central 'assurance' function. But, reflecting the importance of the issue and Network Rail's current position, we are also considering how best to strengthen the company's focus in this area. We want to see:

[5] See our Network Rail Monitor: http://www.rail-reg.gov.uk/server/show/nav.293

- New stretching targets for asset management capability to ensure Network Rail is at the 'frontier' of asset management, with the capability monitored at a route level instead of only nationally as now. In addition we would expect Network Rail to attain and maintain full PAS 55 certification. (The company currently has conditional certification);
- Having established stronger tests of asset policies that must be in place by CP5, we want to ensure that there is a clearer line of sight to delivery on the ground, with better reporting of maintenance delivery and renewals volumes, disaggregated by route, to allow us to benchmark route performance;
- Improving the quality of the information held about assets, with new minimum data quality standards;
- Improved monitoring of asset performance by introducing new monitoring indicators to improve coverage, and to include all major asset types;
- Improved monitoring of asset condition, including service life data based on robust degradation analysis;
- Improving the transparency of asset condition reporting through new asset condition scores based on a simple 'excellent to awful' grading; and
- Ensuring the 'Offering Better Rail Information Services' (ORBIS) and new operating strategy projects are delivered according to milestones to be set out in the delivery plan. ORBIS is Network Rail's main project to improve its asset information and the operating strategy will deliver a new approach to signalling and train management.

10. We believe these changes would create a strong and balanced package, but we seek views on how it could be improved. A further important issue is whether some of these measures of how well Network Rail manages its assets should be set as regulatory obligations, equivalent to outputs. On the one hand this could be a way to increase the pressure on Network Rail, but it could also be argued that monitoring all these measures and considering Network Rail's performance in the round against the licence is sufficient. Network Rail has eight main asset types and setting regulatory obligations for each measure by route and asset type, by year, potentially creates a very large data set, which means we need to prioritise. At this stage we are considering setting the asset management excellence trajectory, asset data quality, and ORBIS/operating strategy milestones as regulatory obligations. Again, we welcome views.

11. We have considered whether we should introduce a new indicator of changes in journey times, reflecting the emphasis on this in the HLOSs and a concern that focus on reliability and capacity outputs should not result in any erosion of connectivity. Previous work by the industry (for the IIP) highlighted some of the difficulties involved in producing a meaningful measure, but we are consulting on whether we should pursue this. We are also consulting on an accessibility measure linked to the new DfT HLOS fund that improves access at stations

12. An efficient and high performing supply chain is essential to the success of the rail industry. We have considered whether we should establish new indicators to monitor Network Rail's engagement with the supply chain, but we do not see a clear case. However we welcome views. Similarly the industry needs the benefits from continued innovation. We will establish governance arrangements for the new innovation fund set up by the DfT HLOS and we have considered whether further monitoring indicators, beyond the workings of the fund, are required. Again, we see no clear case but we welcome views.

13. Our specific proposals for the output framework are summarised in the table below.

Table 1: CP5 output framework - summarised proposal

Area	Outputs	Indicators	Enablers (these support all output areas)
Train service reliability	Passenger - PPM: E&W, Scotland - PPM by operator - CaSL: E&W, Scotland - CaSL by operator Freight Freight CaSL	Right-time performance (by operator) Average lateness (by operator/service group) NR caused delay minutes (by route) Suite of cause of delay indicators Network Rail caused delay (by route) Suite of cause of delay indicators	Asset management excellence, by route Safety management maturity New system operator capability enabler, which could cover: Process of assembling, validating and publishing the timetable Possessions planning Understanding/measuring capacity availability and utilisation Network planning Network change
Enhancements	Enhancement scheme delivery milestones (set out in an enhancements delivery plan)	Enhancement fund KPIs (e.g. average scheme benefit cost ratios) Improved governance processes for HLOS funds	
Safety	Level crossing risk reduction plan delivery milestones (level crossing closure plan milestones for Scotland)	Level crossing risk reduction measure Precursor indicator model – infrastructure failures Workforce safety Red zone working Passenger safety index Number of enforcement actions against Network Rail or subcontractors	
Network availability (reducing disruption from engineering works)	PDI-P (or alternative measure proposed by industry) PDI-F (or alternative measure proposed by industry)	Possession indicator report metrics	
Network capability	Base requirement at start of CP5 in terms of track mileage & layout, line speed, gauge, route availability, electrification type[6]		

[6] This output provides for a minimum level for the whole network . The capability of some parts of the network will improve during CP5 as a result of the enhancement programme.

Area	Outputs	Indicators	Enablers (these support all output areas)
Stations	Station condition measure (existing SSM measure migrating to new measure in CP5)[7]		
Depots		Average condition score	
Asset management	Asset management excellence capability Asset data quality Milestones for ORBIS/operating strategy projects	New indicators for asset policy delivery, and asset performance/condition monitoring. More transparent condition reporting	
Environment		Indicators demonstrating reduction in carbon dioxide emissions associated with OMRE[8] Carbon and energy efficiency KPIs Carbon embedded in new infrastructure Sustainable development KPIs (tbd)	
Other		Journey time indicator Station accessibility indicator Indicator of improvements in passenger information Possible supply chain engagement indicator Possible levels of innovation indicator	Possible further measures including customer service maturity

14. The main differences between what we are proposing for CP5 compared to CP4 are:

(a) Strengthening the focus on further asset management improvements;

(b) New enablers for the system operator function and customer service maturity;

(c) Changes to how freight train service reliability is measured;

(d) Better measure for stations stewardship (condition of the station infrastructure);

[7] This output provides for a minimum level for all Network Rail maintained stations. The condition of some stations will improve during CP5 as part of the enhancement programme

[8] OMRE refers to operating, maintenance, renewals and enhancement activity

(e) More indicators measured at the route level;

(f) As there is now no safety metric in the DfT HLOS, a revised approach to safety outputs and indicators; and

(g) A wider range of indicators of environmental impact.

15. The levels for some of the outputs are set in the HLOSs (e.g. PPM in Scotland). The proposed levels for the other measures will be set out in Network Rail's SBP (which Network Rail will be consulting on during its development) and confirmed in our draft determination or Network Rail's delivery plan. Hence there will be a number of opportunities later in the PR13 process for stakeholders to comment.

16. We have considered whether to introduce a new change control process for CP5 outputs. Currently we have a formal change control process for enhancement projects which has worked well. Within a particular high level output such as PPM we also allow the trajectory for each train operating company to be flexed if the TOC and Network Rail agree.

17. But we do not allow 'trading' between high level outputs such as PPM and enhancement project delivery. When deciding whether Network Rail has breached its licence if it fails to deliver an output we take a view on whether it has done all it reasonably can to deliver an output – we could in principle decide to change the output if we believe it cannot be delivered. In effect our decisions on how to interpret a failure to deliver an output offer some flexibility, but we could go further and allow Network Rail to formally propose a 'trade off' between high level outputs in CP5. For example the company could propose reducing one type of output and increasing another if it believes this would offer better value for money. We do not believe this would be appropriate for HLOS outputs (unless government has signalled in its HLOSs that this is wanted). It could be more appropriate for high level outputs we have set (such as for network availability), but this risks effectively reopening the balance that was set at the final determination in terms obligations, risk and funding. Hence we are not in favour of this option.

18. We will report Network Rail's progress against the output framework, for example in our Network Rail Monitor. But we want to move to a position where we report in the context of progress against the outcomes and in the context of wider industry trends in terms of, say, revenues. We are considering how best to do this. We are proposing to publish a **whole-industry scorecard** which would give a more rounded picture of the industry's performance. The output framework would be published alongside this scorecard. Some of the data would only be available on an annual basis and we would need to take a view on whether it would be better to have a small/different set of measures which would be available more frequently. An example of what a whole industry scorecard might consist of is shown in the table below.

Table 2: Whole industry scorecard (GB wide, England & Wales, Scotland)

Output framework					
Outcome measures	Passenger satisfaction	Freight modal share	Support for economy (e.g. GDP growth, modal shares, ticket & freight revenue)	Connectivity (e.g. demographic breakdown of passenger #s, % passengers within x mins of town popln > 100,000)	Direct greenhouse gas emissions
Volume measures	Passenger journeys	Passenger kms	Freight tonnes lifted by market	Freight net tonne km by market	
Supply measures	Passenger train km	Passenger vehicle km	Freight train km	Freight vehicle km	
Industry finances	Ticket revenue	Freight revenue	Other revenue	Costs	Subsidy

More detail on the consultation questions is set out in Chapter 3. We welcome views on any aspect of this consultation but we would particularly ask for your views on the following questions:

Q1. Do you agree with our proposals for outputs and indicators for passenger train service performance? Should we retain the sector level outputs for PPM and CaSL (for England & Wales)? Is there more we need to do to ensure consistency with franchise obligations?

Q2. Do you agree with our proposals for an output and indicators for freight train service performance?

Q3. Do you agree that outputs for Network Rail in relation to named projects, capacity metrics and funds should be project-specific milestones defined in the enhancements delivery plan? Do you have any comments on how useful the enhancements delivery plan has been in CP4? What are your views on indicators to measure the efficiency and effectiveness of the use of the funds?

Q4. We propose to define delivery plan milestones to ensure Network Rail delivers a plan to reduce risk at level crossings, and to use certain indicators to monitor Network Rail's delivery of these outputs and its wider legal obligations. Do you agree with this approach?

Q5. Do you have a proposal for an alternative to the existing network availability (for reducing disruption from engineering works) outputs, which could be viably implemented in time for the start of CP5? If the existing outputs are retained do you have any proposals to improve them?

Q6. Should we introduce a measure of the efficiency of the use of possessions, and if so how could this be defined?

Q7. Do you agree that we should retain the CP4 network capability output? Do you have a view on the usefulness of the indicators suggested, or any further suggestions for improvement?

Q8. We want to improve the definition of the existing station condition output (SSM – station stewardship measure) and introduce a new measure – SSM+ – which provides a clearer disaggregation for measuring condition and better, value based, weights. Do you agree with this new approach?

Q9. Do you agree that we retain the current CP4 measure of depot condition but treat this as an indicator rather than an output?

Q10. Do you agree with the proposed new approach to strengthen the focus on further asset management improvements? Do you have any specific comments on the detailed measures?

Q11. Which, if any, of the asset management measures do you think should be regulatory obligations (equivalent to outputs), and which should be enablers/indicators?

Q12.Recognising that certain indicators are needed to monitor HLOS delivery, and that Network Rail is in the process of deciding on further indicators, do you have views on specific environmental indicators which we should monitor?

Q13. Should we introduce a new indicator of changes in journey times? Do you have views on how this measure should be calculated? Should we also introduce a measure of accessibility to stations?

Q14.Should we introduce a new indicator designed to measure improvements in passenger information provision and how should this be measured?

Q15. Should we also consider new indicators for example covering Network Rail's supply chain management and approach to innovation?

Q16. Do you have views on the introduction of a new measure of how Network Rail is developing its capability as a system operator, and what the measure should cover?

Q17. Should we have a mechanism to allow formal trade-offs to be made between high level outputs during the control period?

Q18. What do you think of the idea of a scorecard to provide context to our assessment of Network Rail's performance in CP5? Do you have views on our proposed scorecard, and do you have alternative suggestions?

1. Introduction

Summary of this chapter

1.1 This chapter defines what we mean by the 'output framework' and explains how the output framework is developed during the PR13 process, with this consultation, the Network Rail SBP, our determinations and the Network Rail delivery plan all playing key roles. The timetable and next steps are explained, together with details of how to respond.

The output framework

1.2 As part of our PR13 determination of Network Rail's revenue requirement for CP5 we need to decide what Network Rail should deliver for the money it receives. Although for convenience we refer to a decision about 'the revenue requirement' in the singular, to a large extent we treat England & Wales and Scotland separately and hence most of the inputs to and the analysis for the review are presented separately – there will be two revenue requirements, two SBPs, two delivery plans and so on. Most of the output framework will have specific outputs for Scotland or for the franchises in Scotland.

1.3 Ultimately the railway exists to deliver certain outcomes – very satisfied passengers and freight customers, a growing economy, better connectivity between businesses and people and to support environmental sustainability. We could define what Network Rail needs to deliver in CP5 in these terms. But in practice it is currently not straightforward to link the activities of the company directly to these outcomes. For example, rail enhancement projects could support the economy by increasing the catchment area for workers travelling into conurbations, or by reducing the time taken to travel between major cities, but it is not always straightforward to quantify these links.

1.4 For the current control period we defined certain outputs - obligations on the company which it must deliver in return for its funding – and these outputs (such as delivering specific enhancement projects) are to a large extent under the company's control, although Network Rail is responsible for delivering some measures such as PPM that are not wholly within its control. Many of the defined outputs are intended to ensure that the Secretary of State's and the Scottish Ministers' HLOSs are delivered.

1.5 In CP4 we also defined monitoring indicators which we used for specific purposes. We defined monitoring indicators for asset condition to make sure that Network Rail was not meeting its outputs by storing up problems for the future by 'sweating the assets'. We also defined indicators to help us interpret how Network Rail is delivering the possessions disruption index – because this was a new measure we wanted to ensure it was not leading to perverse outcomes.

1.6 In addition, during the course of the control period we defined two 'enablers' which assess the company's capability to deliver future increases (i.e. not just within, but beyond, the current control period) in outputs and/or efficiency.

1.7 The crucial difference between outputs and enablers/indicators is that if Network Rail fails to deliver the outputs we would consider whether this amounts to a licence breach and hence we may take enforcement action against the company. A failure to deliver either an enabler or an indicator would not in itself be considered as a potential licence breach, although it might highlight wider problems which could themselves be a licence breach. For example it might highlight a potential licence problem which we could then step in to prevent.

1.8 Taken together – the outputs, indicators and enablers – make up the output framework. We intend to set an output framework for CP5 using the same structure, but with a number of changes within the overall structure. As we monitor Network Rail's delivery during a control period we use a wide range of detailed inputs, for example reports of the progress of specific projects – this consultation does not cover all the layers of more detailed monitoring.

Process for determining output framework

1.9 Network Rail's output framework is set during the periodic review process which includes the following main stages:

(a) Publication of the HLOSs;

(b) Publication of this consultation;

(c) Network Rail's SBP (January 2013);

(d) Our draft determination (June 2013);

(e) Our final determination (October 2013); and

(f) Network Rail's delivery plan (March 2014).

1.10 Network Rail seeks views on the SBP during its development (we will also seek any additional views after it is published). We consult our draft and final determinations, and on Network Rail's draft delivery plan. Many decisions on the output framework will not be confirmed until the delivery plan, and there is considerable scope for stakeholders to understand progress and get involved.

Next steps and timetable

1.11 We will review the responses to this consultation, but we will not take a final decision on the overall structure of the output framework until our draft determination (when we will summarise responses to this consultation). Following consultation we will confirm our conclusions in our final determination.

1.12 The timing of the process from now to the draft determination is tight, because we would like Network Rail – as far as possible – to set out its proposed output framework in its SBP. Network Rail will be reporting on its progress in developing output forecasts for its SBP to us by the end of September 2012.

1.13 We intend to hold a workshop on this consultation in September 2012 and there will be further opportunities to influence the development of the CP5 output framework as part of the process described above.

Structure of this document

1.14 This consultation document is structured as follows:

(a) Chapter 2 covers the recently published HLOSs, the questions which need to be answered to set the CP5 output framework, and the principles we are using to form our views;

(b) Chapter 3 sets out our proposals; and

(c) Annex A provides background information on the output framework established for CP4, responses to our earlier consultation and recommendations from the initial industry plan.

1.15 We have also published separately[9] the indicators we currently use to monitor the delivery of the possessions disruption indicators for passengers and freight (PDI-P and PDI-F). We are proposing that revised versions of these indicators are made available through our data portal in CP5 to improve transparency.

Consultation responses

1.16 We welcome views on any aspect of this consultation but we would particularly ask for your views on the questions set out in the executive summary.

1.17 This is a slightly shorter consultation than our usual three months, reflecting the fact that we have consulted earlier on outputs, and that there will be further consultation opportunities before decisions are taken. Please send your responses in electronic (or if not possible, in hard-copy format) by 28 September to:

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Email: chris.littlewood@orr.gsi.gov.uk
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One Kemble Street
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1.18 Our aim is that all documents on our website adhere to certain standards of accessibility. For this reason, we would prefer to receive your correspondence in an editable format such as Microsoft Word. If you do send a PDF document or similar, we would be grateful if you could create it from an electronic file rather than an image scan, and ensure that no security settings in the document properties restrict access.

1.19 If you send a written response, you should indicate clearly if you wish all or part of your response to remain confidential to ORR. Otherwise, we would expect to make it available on our website and potentially to quote from it. Where your response is made in confidence please can you provide a statement summarising it, excluding the confidential information, which can be treated as a non-confidential response. We may also publish the names of respondents in future documents or on our website, unless you indicate that you wish your name to be withheld.

[9] http://www.rail-reg.gov.uk/pr13/PDF/nr-possession-indicator-report-12-13.pdf

2. Defining the CP5 output framework

Summary of this chapter

2.1 This chapter summarises the recently published HLOSs, which we need to give effect to in our output framework. It then sets out what further decisions need to be taken and the principles we are using to make our judgements.

The new HLOSs

2.2 In June this year the Scottish Ministers published their HLOS and SoFA, and in July the Secretary of State published her HLOS and SoFA[10]. The Scottish Ministers' HLOS covers the rail network in Scotland and the Secretary of State's covers England & Wales, except for health and safety which is a reserved matter for the Secretary of State.

2.3 In summary, the Scottish Ministers' HLOS specifies:

(a) A process to **improve average journey time** across service groups.

(b) **Network capability** and **capacity** in order to **satisfy the track access rights** of operators.

(c) Each Scottish franchise to achieve **92.5% PPM by the end of CP5**, with at least **92% PPM in each year** of the control period.

(d) **Average station asset condition to be maintained** so that the ScotRail franchise operator can fulfil its current and future service quality obligations.

(e) Planning for **cross-border services to keep at least one route open**, with Scottish Ministers kept informed of any short-duration closures as far in advance as practicable.

(f) Named enhancements to the capacity or capability of the network:

- Edinburgh to Glasgow Improvements Programme (EGIP).
- Borders Railway, supporting the reinstatement of the former Waverley line between Edinburgh and Tweedbank.
- Aberdeen to Inverness Line Improvements Phase 1.
- Highland Main Line Rail Improvements Phase 2.

[10] The Scottish Ministers' HLOS is available at http://www.transportscotland.gov.uk/strategy-and-research/publications-and-consultations/j232012-00.htm and the Secretary of State for Transport's is at http://www.dft.gov.uk/publications/hlos-2012.

- Develop capability to implement a rolling programme of electrification of around 100 track kilometres each year once EGIP is completed.
- Motherwell signal box and depot enhancements.

(g) Funds to allow flexible interventions:

- Stations fund (£30m).
- Strategic rail freight investment (£30m).
- Network improvement fund for interventions in support of the strategic priorities of Scottish Ministers (£60m).
- Future network development fund (£10m) to support the development of proposed enhancements to the network in CP6 and beyond.
- Level crossings fund (£10m), to support the closure of level crossings.

(h) The Scottish ministers also seek a **sustained reduction in carbon dioxide emissions** per train kilometre and per freight tonne kilometre resulting from Network Rail's operation, maintenance, renewal and enhancement of the network.

2.4 In summary, the Secretary of State for Transport's HLOS specified:

(a) A reduction of the risk of accidents at level crossings and establishes a fund to support this.

(b) **92.5% PPM by the end of CP5** and no more than **2.2% of trains cancelled or significantly late** (CaSL) at their destination by the end of CP5 (subject to a further review by ORR). For both PPM and CaSL the Secretary of State requires a focus on the worst performing routes, and on those where low reliability has the greatest economic effect.

(c) **Increased capacity to carry passengers**, as specified in a '**capacity metric**' which defines the number of arriving passengers to be accommodated into major cities during the morning peak in demand.

(d) More information on the industry's environmental performance including:

- Indicators of carbon and energy efficiency performance (to be developed and published by the industry), including measuring and reducing the carbon emissions associated with the delivery of new infrastructure using a suitable carbon accounting methodology;
- Confirmation of decision-making processes and investment plans to take account of anticipated climate change; and
- Evidence in industry's investment proposals of consideration of the Government's broader environmental agenda, for instance how industry is using resources in a sustainable way.

(e) In addition to projects already committed to, the HLOS required these enhancements to capacity or capability of the England & Wales network:

- The 'electric spine' – a set of routes to be electrified and enhanced in capability in order to increase connectivity with an electrified freight and passenger route from the south coast to South Yorkshire via Oxford and the Midlands;
- Further electrification projects in South Wales, the Thames Valley, the Midlands and Yorkshire;

- A new rail link from the Great Western Main Line to Heathrow Airport, subject to certain conditions being met;
- Increased access to Gatwick Airport through enhanced capacity at Redhill;
- Increased capacity north of Ely to enhance freight and passenger capacity across East Anglia;
- Northern hub capacity enhancements;
- Bristol city capacity projects; and
- Further implementation of the European Rail Traffic Management System.

(f) The following ring fenced investment funds:

- Strategic rail freight network (£200m);
- East coast connectivity (£240m) to improve capacity and reduce journey times on the route;
- Passenger journey improvement (£300m) to reduce journey times, increase reliability and for other rail industry discretionary investment;
- Station improvement (£100m) including to improve the ease of access to stations and passenger information;
- Development (£140m) to fund innovation and for the development of potential future schemes, including work to develop the link between High Speed 2 and the existing network; and
- Level crossing safety (£65m) to reduce risk of accidents at level crossings.

2.5 In addition to the HLOSs, the two governments also issued guidance to ORR, which is relevant to how we transpose the HLOS into obligations on Network Rail for CP5. The Scottish Ministers' guidance[11] included a summary of Scottish Ministers' ambitions for Scotland's Railways, which they want to realise through improvements to journey times and connections, reduced greenhouse gas emissions and improved quality, accessibility and affordability of the rail service. It also included requests relevant to the setting of outputs that:

(a) ORR supports a more integrated but more decentralised approach to delivering rail services (e.g. supporting closer working arrangements between Network Rail and freight and passenger train operators in Scotland);

(b) the output framework supports as far as possible the industry's collaborative delivery of the HLOS performance targets, but that performance improvements must not be achieved at the expense of journey times;

(c) ORR seeks to secure an efficient and value for money outcome to PR13, in particular that we consider value for money implications of changes to the regulatory framework or processes;

(d) ORR supports Network Rail in its measurement of greenhouse gas emissions, adaptation to climate change, efficient use of resources and energy and effective stewardship of the natural environment; and

(e) ORR ensures Network Rail's assets in Scotland are managed to the specific needs of the Scottish operating route and offer best value for money.

[11] Available at http://www.transportscotland.gov.uk/files/documents/rail/rail2014/The_Scottish_Ministers__Guidance_to_the_ORR_July_2012.pdf

2.6 The guidance from the Secretary of State for Transport[12] summarised her priorities as set out in the March 2012 'Reforming the Railways' Command Paper. It also included requests relevant to the setting of outputs that:

(a) ORR oversees improvements in passenger and workforce safety through the 'so far as reasonably practicable' approach to risk control, enforcing safety legislation and delivering EU Common Safety Targets;

(b) ORR notes that the Secretary of State does not wish to incur expenditure beyond allocated budgets and wishes to be consulted about expenditure which is not, or is low, value for money. She also wishes to be advised of ORR decisions that are likely to have material financial consequences for government;

(c) ORR should use the five-case business case approach to appraisal of uses of the funds specified in the HLOS, including for instance assessment of benefit cost ratios (BCRs) of the interventions required to deliver HLOS;

(d) ORR and the Secretary of State should work closely in facilitating partnership arrangements between Network Rail and train operators;

(e) ORR assures the Secretary of State that Network Rail's asset management strategy secures best value for money over the whole life of the assets;

(f) ORR notes the Government's rail freight policy when developing proposals which affect rail freight; and

(g) ORR continues to work to increase transparency on industry cost, revenue, efficiency, performance and real-time data.

Decisions to be taken

2.7 The HLOSs are a 'given' and are outputs in our framework for CP5. We also need to decide how we give full effect to the HLOS outputs e.g. if the HLOS output is for the end of the control period, do we want to set targets for intermediate years? We also need to answer the following questions:

(a) In which **further areas do we want to set outputs** and what specific measures (i.e. if we want to have a train service performance output, how exactly should we measure it?) should we set in each area? We could reduce the number of areas and measures compared to CP4 or increase them. How many measures do we want to set – a few key measures or a wider set of measures? More is not necessarily better – for example we could set so many outputs that Network Rail is excessively constrained and would seek a large risk premium in its revenue requirement. We could retain similar measures but try to improve their definition. Also, should the measure be fully under Network Rail's control – we currently set PPM targets which also rely on TOCs to deliver.

(b) **In which areas do we want to set enablers or indicators**?

(c) **How disaggregated** should the measures be in terms of geography and time period? For example we currently disaggregate some outputs and indicators by train operating company. Should we also set them by operating route to fit with the way Network Rail is now organising itself?

[12] Available at http://assets.dft.gov.uk/publications/hlos-2012/sos-guidance-to-orr.pdf

(d) **Where the level is not already set by the HLOS, what level should the output/enabler/indicator be set at?**

(e) Should there be a formal **change control process**? We currently have a process in place for individual enhancements, but there is no process to, say, trade between enhancements and train service performance outputs.

Principles

2.8 Given the number of possible outputs, enablers and indicators, we need a set of principles to guide our decisions. We see the following as the most relevant:

(a) We want to maximise the impacts on the outcomes we want to achieve: increased passenger and freight customer satisfaction, higher economic growth, better connectivity and better environmental sustainability;

(b) We have aimed to balance the competing criteria of creating a framework that is comprehensive but not unnecessarily complex, while also recognising that the more outputs we set the more risk Network Rail potentially faces (and hence the higher its costs may be);

(c) We want to give Network Rail and the industry flexibility to deliver in a way which maximises value for money;

(d) We want to adapt to Network Rail's devolution of its decision making to route level[13], with more route level monitoring (which in turn allows better benchmarking); and

(e) We want to consider where to strengthen the current framework, learning lessons from our experience of the current control period.

2.9 When we report against the output framework we will want to do this in a way which furthers our transparency strategy[14].

2.10 In formulating our proposal outlined in the next chapter we have taken account of the evidence available from the experience of CP4 and more widely. This information is included as background in an annex to this document, which summarises:

(a) the CP4 output framework;

(b) the responses to our first PR13 consultation, which asked for views on Network Rail's outputs; and

(c) the outputs included in the initial industry plan for CP5, which was published in September 2011.

2.11 We have also published[15] the findings of a review by Arup, the independent reporter, of the effectiveness of the CP4 output framework. We asked the reporter Arup to carry out the review to help us understand:

[13] By 'route' we mean Network Rail's operating routes.

[14] This can be found at http://www.rail-reg.gov.uk/server/show/ConWebDoc.10984

[15] The Arup review will be available at http://www.rail-reg.gov.uk/pr13/consultations/outputs.php from 02 August 2012.

(a) How the CP4 output framework changed the behaviour of Network Rail and operators.

(b) How that behaviour compares with the intended outcome of the framework (e.g. as stated in ORR's determinations or in Network Rail's delivery plan).

(c) What are the strengths and weaknesses of the CP4 approach?

(d) Are there alternative measures or metrics that might align better with the intended outcome than the CP4 approach? How certain is it that these could be ready (in terms of data collection, verification, forecasting) in time to be used as obligations for CP5?

(e) What are the options for further disaggregation (so the outputs are apparent at a more local level)?

2.12 Some of the issues raised by this review process – such as concerns about whether a safety output should be set – have already been picked up in the new HLOSs. The wider issue is that the output framework must ultimately strike a balance between the different principles. Our proposed approach to striking this balance is set out in Chapter 3.

3. Proposal

Summary of this chapter

3.1 This chapter describes the output framework we plan for CP5, and explains how we have come to this view. Where an output is defined in the HLOSs, this is the starting point for the framework. In many areas Network Rail has work underway (as it develops its strategic business plan) to define new or improved outputs and indicators, but where possible we have included detailed proposals in order to give as full a picture as possible of the output framework we plan to define, for consultees to respond to.

3.2 The chapter is structured as follows:

(a) **Proposed measures in existing output areas** – sets out the measures we are proposing to use as outputs, indicators and enablers in the output areas we monitor in CP4 (train service reliability, capacity/enhancements, safety etc).

(b) **Options** – possible measures in 'new' areas, for instance journey time, not covered in CP4.

(c) Network Rail's **system operator role** – how should we monitor the company in this core area of capability?

(d) The approach to **trade offs/change control** within the control period.

(e) **Whole industry scorecard** – we propose to introduce a 'scorecard' of measures which would give context to Network Rail's performance against the output framework.

Proposed measures in existing output areas

Train service reliability – passenger

England & Wales outputs

3.3 The DfT HLOS sets out required national PPM and CaSL levels to be delivered by the end of CP5. It also specifies that a plan should be produced to improve PPM and CaSL on the worst performing routes.

3.4 We see it as essential that, for England and Wales, PPM and CaSL outputs are also set for each TOC, because Network Rail could otherwise try to meet the national output by focussing efforts and resources on some TOCs to the detriment of others.

3.5 To monitor progress towards the end CP5 output and to ensure passengers' interests are not compromised in the delivery of the end-CP output, it is also important to set outputs year-by-year.

3.6 We need to decide at what level the disaggregated (by TOC and by year) outputs will be set, consistent with the national and end-CP5 outputs set out in the HLOS. We will ask Network Rail to produce

disaggregated forecasts in its SBP. The DfT HLOS requires us to review the national PPM and CaSL outputs (to see if more ambitious outputs could be set, if this were to be affordable and value for money) and we will do this in early 2013 after we have received the Network Rail SBP.

3.7 We are not proposing to set outputs by Network Rail route in England &Wales as we believe this would not be a meaningful measure for customers, and risks creating confusing overlapping obligations with TOC based outputs. But we will establish indicators of Network Rail's performance by route (see below) because this disaggregation best reflects Network Rail's organisational structure.

3.8 We are not setting an output to reduce Network Rail delay minutes by a certain level as we did in CP4. PPM is a more passenger focussed measure and we consider that the PPM and CaSL obligations will drive Network Rail towards the best outcomes for passengers. In the interest of creating a simpler framework, delay minutes will now only be used as a route based indicator (see below).

3.9 We are not requiring sector level outputs[16] for England & Wales, although we see the pros and cons of these. These were established in the 2007 DfT HLOS, but DfT did not specify them in its 2012 HLOS. Mixed views were expressed in the Arup report as to the value of sector level outputs. Arguably they put a greater focus on certain types of services (as with our current enforcement action on long distance services) but they add another layer of outputs which could be seen as unnecessary.

Scotland outputs

3.10 The TS HLOS sets out a required PPM output level for the end of CP5, and a separate target for each year of CP5 for each franchise let by the Scottish Ministers. For the purposes of this consultation we are assuming the targets will apply both to the ScotRail franchise and the separate Caledonian Sleeper franchise.

Indicators (GB wide)

3.11 Network Rail will be setting delay minute reduction targets for each route, for each year in CP5, for delay caused by Network Rail itself. Forecasts of these numbers will be set out in the SBP and confirmed in the delivery plan. It will also produce 'cause of delay' indicators (such as delay attributable to adverse weather conditions). We will expect these indicators to be published and use them to monitor the company's progress.

3.12 Right time train service performance data were recently published at the national and sector level and, subject to a review of data quality, will be published at the TOC level shortly. We see this as an important step in giving customers more information. But it is also an important prerequisite should it be decided to set an output for right time performance in CP6. We are therefore asking Network Rail to produce forecasts for right time performance in its delivery plan by TOC so that the industry can develop a better understanding of what drives this. We will work with the industry to understand this better during CP5.

3.13 Because PPM measures punctuality at a train service destination, we want Network Rail also to publish measures of the average lateness (that is the average lateness of trains at the stops along its route). We want these to be published in CP5, and are interested in views as to the appropriate level of disaggregation (national, by train company or by service group).

3.14 We will also monitor progress against the plan to improve performance on the worst performing routes in England & Wales, as required by the DfT HLOS. Network Rail will produce a draft of this plan in its SBP

[16] Sector level means separating services into long distance, London & South East, and regional categories.

with more detail in a final version in the delivery plan. We expect this plan to include proposals as to how the success of the plan will be tracked.

3.15 The outputs we set for Network Rail need to be consistent with the obligations on franchised operators and the industry is working to ensure common assumptions. We welcome views on whether there is more we need to do to ensure consistency.

Consultation questions

Q1. Do you agree with our proposals for outputs and indicators for passenger train service performance? Should we retain the sector level outputs for PPM and CaSL (for England & Wales)? Is there more we need to do to ensure consistency with franchise obligations?

Table 3: CP5 framework outline proposal – train service reliability, passengers

Measure	Disaggregation	Status (& where set)	Main rationale
PPM	National (E&W, Scotland)	Output (set in HLOSs)	HLOSs
PPM	By operator	Output (forecast in SBP, set in delivery plan)	Passenger satisfaction outcome
CaSL	National (E&W, Scotland)	Output (set in DfT HLOS)	HLOS
CaSL	By operator	Output (forecast in SBP, set in delivery plan)	Passenger satisfaction outcome
Right time performance	By operator	Indicator (forecast in SBP)	Passenger satisfaction outcome
Average lateness	By operator or service group	Indicator (not forecast, but actuals monitored)	Passenger satisfaction outcome
Network Rail caused passenger train delay minutes	Network Rail route	Indicator (forecast in SBP)	Passenger satisfaction outcome
Suite of cause of delay indicators (as used in Network Rail own reporting)	Various, including Network Rail route	Indicator (monitored)	Passenger satisfaction, HLOS
Worst performing routes (indicators of success of plan to address)	Specific to route	Indicator (monitored)	Passenger satisfaction, DfT HLOS

Train service reliability – freight

Outputs

3.16 Neither HLOS specified freight train service performance, but it is important for freight customers that such an obligation is in place. We recognise the issues set out in the Arup report that the current output is not targeted at the service characteristics that most concern freight customers, and we are keen to implement an output which is. We are proposing to implement the output favoured by the operators and Network Rail, a measure similar to passenger CaSL, once this is fully developed.

3.17 We have asked Network Rail to provide forecasts for both the new output and the current output (Network Rail caused freight train delay minutes), by year, in its SBP. If we are convinced that the new output is an improvement, we will set its level in our draft determination. The SBP forecast of delay minutes will allow a fall-back option if the industry work on 'freight CaSL' does not reach a conclusion.

Indicators

3.18 We could also require that Network Rail publishes indicators of train service performance on strategic freight flows, depending on the disaggregation of the new output. We will retain Network Rail caused freight delay minutes as an indicator, so that there remains a long-term time series of Network Rail's performance in this area. We are proposing that this is disaggregated by Network Rail route, because this breakdown reflects Network Rail's management of performance, but if a different breakdown would be more useful to freight operators or customers, we welcome suggestions.

Consultation question

Q2. Do you agree with our proposals for an output and indicators for freight train service performance?

Table 4: CP5 framework outline proposal – train service reliability, freight

Measure	Disaggregation	Status (& where set)	Main rationale
Freight measure of cancellations & significant lateness	To be decided	Output (forecast in SBP, set in draft determination)	Freight customer satisfaction outcome
Network Rail caused freight train delay minutes	Network Rail route	Indicator (forecast in SBP)	Freight customer satisfaction outcome
Suite of cause of delay indicators (as used in Network Rail own reporting)	Various, including Network Rail route	Indicator (monitored)	Freight customer satisfaction, HLOS

Enhancements: named projects, capacity metrics and funds

3.19 The DfT and TS HLOSs both require named capacity and other enhancement projects to be delivered. The DfT also requires the delivery of capacity metrics. Both HLOSs also specify certain funds to deliver a given objective but where the actual projects to be delivered will be decided by the industry under our supervision.

Named projects

3.20 In both the DfT and TS HLOSs the named schemes (for example the Northern Hub work, or Highland Main Line improvements) are only specified at a high level. We need to establish requirements at a greater level of detail to ensure Network Rail's obligations are clear, and to ensure the assumptions Network Rail is making (for example about rolling stock availability) are also clear, so that stakeholders can provide input and challenge. We plan to follow the same approach as for CP4 because we believe this has worked well and that nothing has altered in the wider environment to mean changes are needed. The Arup review confirmed that the process is seen to have worked well.

3.21 This means that for the named projects Network Rail will set out outline delivery milestones in its SBP and confirm these in its enhancement delivery plan[17]. Stakeholders will be given the opportunity to comment on the SBP during its development by Network Rail. We will consult on the SBP and again on the delivery plan. In this way the delivery milestones will reflect stakeholder input, and the main issue here is likely to be ensuring a match between the service level changes operators are trying to deliver and Network Rail's infrastructure changes. The delivery milestones will be outputs. An example showing project delivery milestones from CP4 is included below.

Enhancement scheme delivery milestones

3.22 Below is an example of delivery milestones associated with the Kings Cross enhancement scheme delivered in CP4.

Figure 1: Example enhancement scheme delivery milestones (Kings Cross, 2009 delivery plan)

Activities and milestones

The milestones for the works are planned around avoiding major disruptive works during the London 2012 Olympics. The final phase Southern Square package is not planned to start until after the Olympics. The legal agreements contain backstop dates for start of the works on the western concourse (December 2012).

Planning permission for the new facilities was granted in November 2007. As the station is Grade 1 listed, Listed Building consents are being sought as and when detailed designs are completed. The station works form part of the redevelopment on the King's Cross lands and there are a number of property agreements with the DfT, other land owners and the developers. Both the enhancement and renewals works on King's Cross station are being carried out by a Network Rail delivery team.

Activity	Output	Date
Eastern Range ready for occupation	Office space for decant of station and TOC operational facilities.	Q1 2009
Platform Y commissioned	Allows work to commence on remaining platforms. Increases train capacity in longer term.	Q2 2010
Plant room and shared service yard commissioned (interim state)	Supports stations operations.	Q3 2010
Main train shed interior modifications to link in with Western concourse	Provides new passenger circulation regime for new concourse.	Q4 2011
Western range refurbishment	Provides operational facilities.	Q4 2011
Western concourse in use	Enhanced passenger and retail facilities.	Q4 2011
Main train shed roof renewal	Condition-led renewal.	Q1 2012
Southern Square reconfiguration	Completes reconfiguration of station concourse and a condition of planning permission.	Q3 2013

This scheme is also an example of the use of the 'change control' process, with the delivery date for the 'Main train shed roof renewal' being moved from Q1 2012 to June 2012, to allow scaffolding to be taken down later than planned (with the operational opening of the new concourse unaffected). Network Rail has to consult affected operators on any change to delivery plan milestones before applying to ORR to make the change.

DfT capacity metrics

3.23 In the case of the DfT capacity metrics, Network Rail will set out how these will be delivered – in terms of the enhancement projects or specific actions required – in its SBP and we will confirm these outline plans in our draft determination. In particular we will need to check that the schemes Network Rail describes are required and meet the BCR requirements included in the Secretary of State for Transport's guidance. Network Rail will include more detailed delivery milestones for the required schemes in its delivery plan, and these milestones will become outputs in the same way as the milestones associated with schemes named in the HLOSs. There will be the same opportunities for stakeholder engagement as in the process for the named schemes described above.

[17] Network Rail's delivery plan and its updates (most recent update June 2012) are available on its website at http://www.networkrail.co.uk/aspx/12070.aspx

Funds

3.24 Both the DfT and TS HLOSs specify objectives for certain funds and limits on what can be spent. The main issue here is to establish the governance arrangements for these funds to ensure good value for money projects are specified and are delivered at an efficient cost.

3.25 We reviewed the working of the CP4 funds, and commissioned Steer Davies Gleave to review the funds proposed for inclusion in the CP5 HLOSs[18]. They recommended that in CP5 the fund outputs be made more visible to stakeholders, hence our proposal below that the governance arrangements for the CP5 funds include the publication of indicators to make the benefits of the expenditure clearer.

3.26 The Arup report into CP4 outputs found that early involvement of wider stakeholders – in particular operators – in the selection and design of fund schemes led to better results. We therefore expect the governance arrangements for the funds to explain how operators, and also representatives of passengers and freight customers, will be involved in deciding how the funds are spent. Network Rail is working on proposals and will set these out in more detail in its SBP. We will continue to carry out reviews of the efficient costs of projects within each fund.

3.27 The process for establishing delivery milestones will be different from the one described for named projects and capacity metrics. Because the industry will need to assess the best approach, the detailed delivery milestones will only be firmed up during the course of the control period. As this occurs Network Rail will include the agreed milestones in its enhancements delivery plan to ensure these are visible to everyone.

3.28 It is important that the purpose of the funds remains prominent in their governance and criteria for scheme selection, and to help ensure this we think indicators of the funds' efficiency and effectiveness should be published. These might include general measures (such as the average benefit to cost ratio of schemes approved or delivered through the fund) or measures specific to a fund's purpose (for example indicators showing change to average journey time as a result of fund schemes).

Milestones for other large-scale projects

3.29 Some important changes within the industry will be part of enhancement projects – for example European Rail Traffic Management System (ERTMS) will be implemented on the Great Western, Thameslink and East Coast routes, and we will monitor this as part of our project monitoring. In CP5 we are also proposing to establish delivery milestones for major projects which are not classed as traditional 'enhancements' to the rail network but are instead categorised as renewals or other investment.

Consultation questions

Q3. Do you agree that outputs for Network Rail in relation to named projects, capacity metrics and funds should be project-specific milestones defined in the enhancements delivery plan? Do you have any comments on how useful the enhancements delivery plan has been in CP4? What are your views on indicators to measure the efficiency and effectiveness of the use of the funds?

[18] The Steer Davies Gleave report is available at http://www.rail-reg.gov.uk/pr13/publications/index.php

Table 5: CP5 framework outline proposal – named projects, capacity metrics and funds

Measure	Disaggregation	Status (& where set)	Main rationale
Enhancement scheme delivery milestones	Specific to enhancement location	Output (set in delivery plan)	HLOSs
Enhancement scheme indicators for schemes associated with HLOS funds (e.g. average scheme BCR)	Specific to enhancement scheme	Indicator (not forecast, monitored)	Support for economic growth outcome, HLOSs

Safety

Outputs

3.30 Health and safety is a reserved matter for the Secretary of State. The CP5 DfT HLOS does not set a specific safety metric (unlike CP4 when a metric was set) but states the importance of improving safety and recognises that the industry is now required to deliver EU Common Safety Targets[19]. Network Rail is required to meet its legal obligations on health and safety to maintain and, where reasonably practicable, improve safety and in doing so will contribute to the achievement of the EU Common Safety Targets. We will continue to monitor safety improvements as a priority.

3.31 Both the DfT and TS HLOSs establish ring-fenced funds in order to reduce the risk of accidents at level crossings (with the TS HLOS specifically referring to the closure of level crossings), and so Network Rail will need to include a plan to deliver this risk reduction in its SBP. We will establish delivery plan milestone outputs associated with this plan.

Indicators

3.32 Network Rail will need to forecast level crossing risk reduction in its SBP, and we will monitor its delivery of this indicator.

3.33 Network Rail should provide an indication of where the Precursor Indicator Model value for infrastructure failures and the risk value for workforce safety will be for each of the five years of the control period, taking account of its policies, operations and enhancements which we would reasonably expect would drive a reduction in risk over the period.

3.34 In our letter to Network Rail setting out our requirements for its SBP[20] we asked the company to move towards removing red zone working, especially in circumstances where the risks were higher (for instance during hours of darkness), subject to an assessment of the costs and benefits. We are asking Network Rail to forecast a measure of the amount of red zone working at the start of the control period, and an indication of when red zone working will either be removed (quantifying the reduction), or provide evidence that to do so would incur costs which are disproportionate to the risks posed (on a case by case basis).

3.35 We will also monitor the passenger safety index and the number of enforcement actions taken against Network Rail or its subcontractors.

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[19] Set out on the European Railway Agency website at http://www.era.europa.eu/Core-Activities/Safety/Pages/common-safety-targets.aspx

[20] Available on our website at http://www.rail-reg.gov.uk/pr13/publications/index.php

Enablers

3.36 We intend to continue to agree trajectories for safety excellence based on the RM3 model with Network Rail. Network Rail will set out trajectories in its SBP.

Consultation questions

Q4. We propose to define delivery plan milestones to ensure Network Rail delivers a plan to reduce risk at level crossings, and to use certain indicators to monitor Network Rail's delivery of these outputs and its wider legal obligations. Do you agree with this approach?

Table 6: CP5 framework outline proposal – safety

Measure	Disaggregation	Status (& where set)	Main rationale
Level crossing risk reduction plan delivery milestones	Specific locations on network	Output (set in SBP or delivery plan - to deliver reductions in level crossing risk funded by HLOS)	HLOS
Level crossing risk reduction measure Level crossing closures (Scotland)	tbd	Indicator (forecast in SBP - to deliver reductions in level crossing risk funded by HLOS)	HLOS
Red Zone Working	tbd	Indicator (forecast in SBP)	Workforce safety
RM3 excellence in health & safety culture & risk control	tbd	Enabler (forecast in SBP)	Management maturity
Precursor Indicator Model – infrastructure failures	tbd	Indicator (forecast in SBP or delivery plan)	Asset management
Workforce safety	tbd	Indicator (forecast in SBP or delivery plan)	Workforce safety
Passenger safety index	Network Rail total	Indicator (monitored)	Passenger safety
Number of enforcement actions against Network Rail or subcontractors	Network Rail total	Indicator (monitored)	Passenger and workforce safety

Network availability (reducing disruption from engineering works)

Output

3.37 The Arup review notes mixed views of the current measures, with particular criticism of the complexity of the passenger disruption indices (PDI-P for passengers, PDI-F for freight) as measures. Our view is that it is essential that there continue to be obligations on Network Rail to reduce disruption to passengers from engineering work and, to ensure freight is not disadvantaged, we consider that there should also be an obligation not to increase disruption to freight.

3.38 We note that alternative measures have been suggested but no consensus has yet emerged on a better alternative.

3.39 It is therefore our plan to continue to set the existing output in CP5, covering the whole of Great Britain, unless a viable alternative proposal is put forward as a response to this consultation. We will also consider any suggestions of changes to how the CP4 outputs are calculated.

Indicators

3.40 The existing monitoring indicators have proved useful in CP4 and we plan to continue using them in CP5. A recent reporting pack of these indicators is published on our website alongside this consultation. Although this pack is sent to the industry on a regular basis we are aware that knowledge of the reporting pack is not widespread and it is not published on a regular basis. In CP5 we will publish the pack on a regular basis through our data portal. The measures of compliance with the working timetable, which Network Rail has worked to develop, should form part of this suite of indicators. The Arup review suggested that a measure of the efficiency of Network Rail's use of possessions be developed, and we invite views on whether such a measure would be useful and how it might be defined.

Consultation questions

Q5. Do you have a proposal for an alternative to the existing network availability (for reducing disruption from engineering works) outputs, which could be viably implemented in time for the start of the next control period? If the existing outputs are retained do you have any proposals to improve them?

Q6. Should we introduce a measure of the efficiency of the use of possessions, and if so how could this be defined?

Table 7: CP5 framework outline proposal – network availability

Measure	Disaggregation	Status (& where set)	Main rationale
PDI-P [or alternative measure proposed by industry]	Network total	Output (forecast in SBP, set in determination)	Passenger satisfaction outcome
PDI-F [or alternative measure proposed by industry]	Network total	Output (forecast in SBP, set in determination)	Freight customer satisfaction outcome
Possession indicator report metrics	Various, including by operator	Indicator (monitored)	Passenger & freight customer satisfaction outcomes

Network capability

Output

3.41 We propose to retain the CP4 output in relation to capability, with Network Rail required to maintain network capability at the start of the control period subject to agreed changes via the industry network change process. This would be a requirement across the whole of the GB network. This does not mean that capability would not improve over the control period – for example we would expect a number of the enhancement projects to increase line speeds. The purpose of the capability measures is to provide a minimum level of capability so that Network Rail cannot reduce capability to (for example) save money.

Indicators

3.42 The Arup review highlighted the possibility of a disconnect between improvements in network capability and better outcomes for passengers and freight customers. For example, improvements to linespeed might not be passed through into reduced journey time or improved reliability of services. This issue is one reason why we are considering a journey time indicator and proposing to introduce a 'whole industry scorecard' (explained at the end of this chapter), so that we can monitor the customer-facing outcomes that should result from infrastructure improvements.

Enablers

3.43 While we are not proposing to establish a specific enabler relating to network capability, the system operator measure discussed below should further address the concern raised in the Arup review in relation to the realisation of benefits to customers from improvements to infrastructure capability.

Consultation question

Q7. Do you agree that we should retain the CP4 network capability output? Do you have a view on the usefulness of the indicators suggested, or any further suggestions for improvement?

Table 8: CP5 framework outline proposal – network capability

Measure	Disaggregation	Status (& where set)	Main rationale
Track mileage and layout, line speed, gauge, route availability and electrification type	As defined in sectional appendices, GEOGIS database and national gauging database	Specific output to maintain at end-CP4 level subject to network change control process. (included in determination)	Passenger, freight customer satisfaction outcomes, TS HLOS

Stations

3.44 We propose to maintain the requirement for Network Rail to deliver minimum station stewardship (asset condition) requirements and for this to be an output. However, we want to learn lessons from our recent work on the West Coast franchise.

3.45 As part of the new West Coast franchise, responsibility for the condition of some stations will be transferring from Network Rail to the train operator. This process is likely to continue as other new franchises are let, although the extent of the change has not been decided by DfT. Following a review between ourselves, DfT and the franchise bidders it has been agreed that a new station stewardship measure will be developed for the stations covered by the West Coast franchise.

3.46 The existing measure (which is an output in CP4) takes condition gradings of the various components of a station and calculates a weighted average condition with higher weighting given to more significant components (e.g. a platform attracts a higher weighting than a platform bench). When applied to small numbers of stations the existing measure can be dominated by a few assets which attract a large weighting. The level at which condition is assessed – i.e. how far a station is divided into its components for the condition assessment – is also not defined and so there is the possibility of slightly different condition scores resulting from differences in the calculation methodology. For these reasons we are supporting the introduction of a new measure – SSM+ – for the West Coast (and other franchises) which will use the Modern Equivalent Asset Value (MEAV) as the weighting applied to the condition of station components (to replace the current weighting). It will also define the disaggregation at which the condition assessment should take place.

3.47 Developing the new measure will take time but we want to see what lessons can be learnt. The aim would not to be to substantially change the level of the obligation on Network Rail, which is to maintain current condition (improvements to the condition are delivered through the HLOS specified funds) but to make it easier to monitor whether the obligation is being met.

3.48 Therefore our proposal is twofold. We will retain the existing SSM measure for the start of CP5 for Network Rail maintained stations. If and when the implementation of the SSM+ measure is agreed with Network Rail we will migrate to that measure during the control period.

Consultation questions

Q8. We want to improve the definition of the existing station condition output (SSM – station stewardship measure) and introduce a new measure – SSM+ – which provides a clearer disaggregation for measuring condition and better, value based, weights. Do you agree with this new approach?

Table 9: CP5 framework outline proposal – stations

Measure	Disaggregation	Status (& where set)	Main rationale
Station stewardship measure	tbd	Output (SSM forecast in SBP and set in draft determinations; timing for SSM+ output tbd)	Passenger satisfaction outcome

Depots

3.49 Whereas station condition affects passengers directly, depot condition supports the delivery of other outputs. Depots are an essential part of the running of the railway and we were surprised by the apparent lack of interest in the depot condition output from operators, as reported in the Arup review. Given this position, to simplify the output framework we intend to retain the CP4 measure of a light maintenance depot average condition score, but as an indicator rather than an output.

Consultation question

Q9. Do you agree that we retain the current CP4 measure of depot condition but treat this as an indicator rather than an output?

Table 10: CP5 framework outline proposal – depots

Measure	Disaggregation	Status (& where set)	Main rationale
Depots average condition score	tbd	Indicator (forecast in SBP or delivery plan)	Passenger/freight customer satisfaction

Asset management

3.50 It is essential that Network Rail maintains a strong focus on improving its asset management through the remainder of CP4 and throughout CP5 to support delivery of the outputs set out above. But the quality of asset management also affects what can be delivered (and at what cost) in CP6 and beyond.

3.51 Although 'asset management' is often used as a catch all phrase, how well Network Rail is doing as an asset manager can be measured in a number of ways:

(a) In terms of capability, by the asset management excellence model and/or the PAS 55 standard;

(b) In terms of the quality of the asset policies which set out how work on each asset has been prioritised (new asset policies are in development and will be in place by the start of the CP5), and then by their delivery in terms of maintenance and renewals work carried out; and

(c) By the quality of the information held about the assets.

3.52 The impact of this can be measured through:

(a) the condition of the assets;

(b) the performance of the asset (e.g. how often an asset fails); and

(c) monitoring the delivery of projects designed to improve asset management.

3.53 We see a need to have indicators covering all these areas. We propose to maintain the focus on asset management capability to ensure that Network Rail reaches and remains at the "frontier" of asset management best practice. This will be measured using the same model (AMEM – asset management excellence model) as we use now. We will agree a trajectory for Network Rail's required capability in line with emerging best practice (taking into consideration 'frontier shift'), including best practice in different industries (for example in manufacturing). To align with Network Rail's devolved structure the trajectories should be set and monitored on an operating route basis where appropriate. In addition we propose that Network Rail should be required to gain full organisation-wide certification against the BSI PAS 55 measure for asset management. This provides a useful benchmark for competent asset management within asset intensive industries. The company currently has conditional certification.

3.54 During CP4 we are assessing Network Rail's proposed CP5 asset policies. We have set more demanding criteria to demonstrate robustness, sustainability and efficiency.

(a) To demonstrate robustness (i.e. that the CP5 outputs can be delivered) Network Rail will have to show better understanding of the linkages between maintenance and renewals activities and outputs;

(b) To demonstrate sustainability (i.e. that the asset policies will continue to deliver in the long term) we need to see degradation analyses for each asset group, together with explanations of how the proposed maintenance and renewal interventions will ensure that predicted service lives are achieved; and

(c) To demonstrate that asset policies are efficient, we need to see whole life cost analyses, which test maintenance and renewal trade-offs for each asset group.

3.55 The new policies need to be in place for CP5 and we then need to monitor their delivery. Specifically we will need to monitor delivery of volumes of renewals by asset by route (which will give us new benchmarking information), the delivery of major renewal projects, and the maintenance work by route. We will agree indicators with Network Rail to provide this information.

3.56 Data on assets, and maintenance and renewal unit costs, are vital to Network Rail's management of its assets, including development and delivery of its plans. We need asset and unit price data to be held and maintained at higher defined levels of coverage, reliability and currency (i.e. extent to which the data are up-to-date) and accuracy. We will agree with Network Rail what levels need to be met for each asset for each aspect.

3.57 Network Rail will need to set out improved indicators of asset condition, by asset type based on robust degradation analysis. We want to see more clarity of the reporting of asset condition through the introduction of a simple 'excellent to awful' grading system.

3.58 We expect Network Rail to define a framework which can be populated with indicators to give a view of its asset performance across the board. These will need to be disaggregated by asset type and operating route.

3.59 There are also projects such as ORBIS and the new operating strategy which will improve asset management. It is important these projects are delivered on schedule and realise the projected benefits. We would expect to monitor these closely during CP5 through milestones in the delivery plan.

3.60 We believe these changes would create a strong and balanced package, but we seek views on how it could be improved. A further important issue is whether some of these measures of how well Network Rail manages its assets should be set as regulatory obligations (equivalent to outputs). On the one hand this could be a way to increase the pressure on Network Rail, but it could also be argued that monitoring all these measures and considering Network Rail's performance in the round against the licence is sufficient. Network Rail has eight main asset types and setting regulatory obligations for each measure by route and asset type, by year, potentially creates a very large data set, which means we need to prioritise. At this stage we are considering setting the asset management excellence trajectory, asset data quality, and ORBIS/operating strategy milestones as regulatory obligations. Again, we welcome views.

Consultation questions

Q10. Do you agree with the proposed new approach to strengthen the focus on further asset management improvements? Do you have any specific comments on the detailed measures?

Q11. Which, if any, of the asset management measures do you think should be regulatory obligations (equivalent to outputs), and which should be enablers/indicators?

Environment

Outputs

3.61 Network Rail faces legal obligations in relation to the management of environmental impacts, as do other companies. It is also subject to a network licence condition which requires it to produce an environmental policy. We included environmental sustainability as one of the five outcomes we are seeking to achieve with PR13.

3.62 The electrification programme required by the HLOSs should produce environmental benefits, and elsewhere in PR13 we are setting incentives to reduce transmission losses for electricity used by rolling stock and to encourage consumption to be metered.

3.63 We do not propose to set any environmental outputs for Network Rail in CP5, because they are not required by the HLOSs and because of the existing obligations on the company, and in order not to risk a perverse outcome, such as higher costs driving passengers onto more environmentally damaging modes of transport. However the indicators that the two governments are seeking in their HLOSs must be established and we expect Network Rail to publish further indicators which we can monitor.

Indicators

3.64 The TS HLOS seeks a continuous reduction in carbon dioxide emissions per train km and per freight tonne km arising from Network Rail's operation, maintenance, renewal and enhancement of the network.

3.65 We consider that Network Rail should also be capable of delivering this reduction in England & Wales, and should include a plan to do so in its SBP. We will approve this plan.

3.66 The DfT HLOS requires that the industry should set:

(a) Carbon and energy efficiency objectives, and develop indicators that measure its performance against these;

(b) Within this, measure and reduce the carbon embedded within new infrastructure;

(c) Set out plans for embedding the sustainable development principles[21];

(d) Confirm how decision making processes and investment plans will take appropriate account of climate change; and

(e) Provide evidence in its investment proposals how it is taking into account the Government's broader environmental agenda throughout the lifecycle of programmes and projects.

3.67 The carbon management framework proposed by the industry in its initial industry plans will need to be developed in the SBP in order to fulfil these requirements. Forecasts for the carbon and energy efficiency objectives - and Network Rail's part in this - should be published in the delivery plan, subject to our agreement. We expect this work also to cover Scotland.

3.68 Network Rail is also developing its own sustainability strategy and the company is seeking to define its own performance indicators which support the priorities identified by this strategy (with GB wide coverage). The priority areas are:

(a) Climate change adaptation;

(b) Buildings;

(c) Resource;

(d) Water and emissions;

(e) Land, and

(f) Communities.

3.69 We will use Network Rail's own sustainable development performance indicators (which need to be forecast in the delivery plan) as part of our monitoring of Network Rail's environmental performance.

Consultation questions

Q12. Recognising that certain indicators are needed to monitor HLOS delivery, and that Network Rail is in the process of deciding on further indicators, do you have views on specific environmental indicators which we should monitor?

Table 11: CP5 framework outline proposal - environmental sustainability

Measure	Disaggregation	Status (& where set)	Main rationale
Indicators demonstrating reduction in carbon dioxide emissions associated with Network Rail OMRE activity	England & Wales, Scotland	Indicator (forecast in SBP or delivery plan)	TS HLOS
Carbon & energy efficiency objective indicators	tbd	Indicators (forecast in SBP or delivery plan)	DfT HLOS
Carbon embedded in new infrastructure	tbd	Indicator (monitored)	DfT HLOS
Sustainable development KPIs used in Network Rail's own reporting [new set of measures to be proposed by NR in SBP/DP]	Network Rail route	Indicators (forecast in delivery plan, monitored)	Environmental sustainability outcome

[21] Defined in the initial industry plans available at http://www.networkrail.co.uk/iip.aspx

Options

3.70 We are considering a number of other indicators and we invite views on these.

3.71 We think that the use of enablers in CP4 – measures of Network Rail's capability which can unlock improvements in the medium to long term – has been a success which should be built on in CP5. As outlined above, we intend to retain the safety management maturity model and asset management excellence model enablers in CP5, and we expect these measures to be forecast in the SBP.

3.72 Network Rail is also developing a methodology for measuring its customer service capability, to establish a forecast trajectory for CP5 and to implement a plan to achieve it. We are considering agreeing this trajectory and establishing it as an enabler.

3.73 We recently introduced a new licence condition for Network Rail and operators concerning the provision of information to passengers, particularly during periods of disruption to train services. We are considering whether we should introduce an indicator covering the quality of this information, recognising that this would be a whole industry indicator.

3.74 An efficient and high performing supply chain is essential to the success of the rail industry. We considered whether we should establish indicators to monitor Network Rail's engagement with the supply chain, but take the view there is no clear case for this. However we welcome views. Similarly the industry needs the benefits from continued innovation. We will establish governance arrangements for the new innovation fund set up by the DfT HLOS and we have also considered whether further monitoring indicators, beyond the workings of the fund, are required. Again, we see no clear case but would welcome views.

3.75 Network Rail also needs to monitor its own capability in programme and project management, collaborative working and change management. We expect Network Rail to propose a framework for each of these areas by which we can also monitor its progress.

3.76 We have said that improved connectivity – the connection of people and businesses to each other and to markets and resources – is one of the outcomes we want to achieve through PR13. The Arup review of CP4 outputs highlighted that there was perhaps a 'missing' measure relating to journey time resulting from improvements to infrastructure capability.

3.77 There is no obvious single measure of journey time, and so we are seeking views on how best the industry could measure this in CP5, in particular whether average journey times (over a TOC or service group), or a matrix of minimum or average journey times between defined destinations might be useful for passengers.

3.78 In line with the Scotland HLOS, we will also require Network Rail to produce a plan (with clear deliverables and deadlines) within its SBP to ensure that opportunities to improve journey times are recognised and acted on. We will assess this plan for our PR13 draft determinations.

3.79 Both the England & Wales and Scotland HLOSs provided funds for improvements to stations – including to provide easier access for older or disabled passengers and those with small children. We are considering whether we should define a measure of accessibility or instead rely on monitoring the delivery of relevant enhancement schemes milestones, and we welcome views on this.

Consultation questions

Q13. Should we introduce a new indicator of changes in journey times? Do you have views on how this measure should be calculated? Should we also introduce a measure of accessibility to stations?

Q14.Should we introduce a new indicator designed to measure improvements in passenger information provision and how should this be measured?

Q15. Should we also consider new indicators for example covering Network Rail's supply chain management and approach to innovation?

System operator role

3.80 Network Rail's performance as a system operator is central to its success and key to implementing concessions to manage its infrastructure.

3.81 We plan to define measures of how well Network Rail is performing this role, possibly covering the following functions:

(a) The process of assembling, validating and publishing the timetable;

(b) Possessions planning;

(c) Understanding capacity availability and utilisation;

(d) Network planning; and

(e) Network change.

3.82 Network Rail is developing its proposals in these areas which it will send to us shortly.

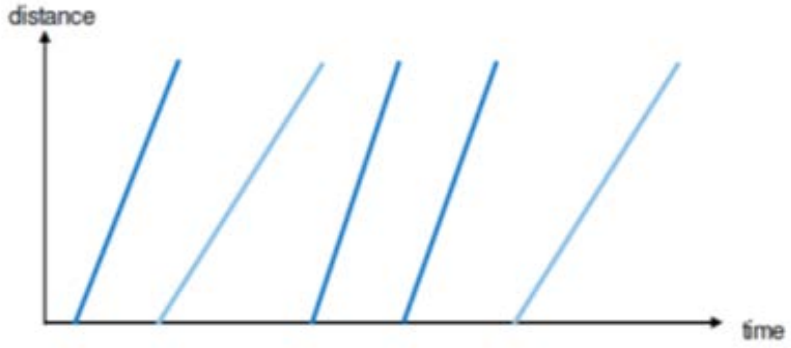
3.83 Capacity utilisation is one of the key performance indicators of the effectiveness with which Network Rail performs the system operator role, and we have been reviewing the approach used in CP4.

Capacity utilisation

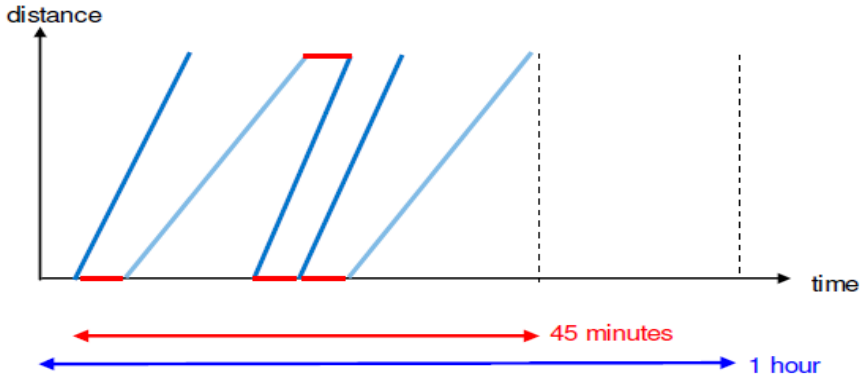
3.84 Understanding the extent to which network capacity is employed is particularly important on a network where the demand to run additional services (both passenger and freight) has increased significantly in recent years, and this trend is expected to continue into the medium and long term.

3.85 The CP4 industry measure of capacity utilisation is the Capacity Utilisation Index (CUI). In simple terms, the CUI is constructed by plotting timetabled train services in a single hour of operation onto a graph, with only the minimum amount of time required to operate the services (known as the headway) between each service. The CUI is the proportion of an hour that would be required to operate these services if this headway was applied. This process is set out in graphical terms below – in this example the CUI is 75%, because with minimum headways the time taken to complete all the services reduces from one hour to 45 minutes.

Timetabled train paths



Calculating the CUI



3.86 The CUI is used by Network Rail to inform both its strategic planning processes (for instance, its Route Utilisation Studies) and its calculation of Capacity Charge rates.

Issues with CUI

3.87 The advantage of the CUI is its simplicity. It is also well understood by the industry and is a good approximation of the extent to which the timetable is likely to be able to absorb delays on a given route section. The disadvantages of the CUI are largely a result of it being a simple measure of a complex problem:

(a) It is a measure based on existing timetabled services and does not allow an assessment to be made of whether the timetable it is based on is efficient or not. This limits its use in making an assessment of efficient capacity utilisation.

(b) The measure does not take account of the impact on capacity of operating a mixture of service types on the same infrastructure and the inefficiency that this introduces to the system. Where services operated have uniform characteristics (for example, a suburban 'metro' type service) on a simple network, a high CUI may be achieved while maintaining high levels of performance. Where, however, services with different operational characteristics operate on the same section of track (for example, express, local passenger and freight), or where the network is complex (for example around termini) a much lower level of CUI is likely to be achievable because the infrastructure is unlikely to have been developed to optimise performance of each of these different service types.

(c) The CUI is calculated on discrete route sections. Given that much performance risk is associated with junctions, a low CUI score on a 'plain line' section does not necessarily imply that additional traffic could be added without performance implications. This is because capacity constraints at junctions inevitably affect performance on other route sections.

3.88 The consequence of all these points is that the CUI on its own is unable to provide a consistent measure of capacity utilisation.

New measure

3.89 As part of the work that Network Rail are doing to recalibrate the capacity charge, we have asked the company to revisit the relationship between capacity utilisation and congestion related reactive delays (CRRD – delays which are knock-on results of earlier delay, with disruption to the train service causing further disruption because of the finite capacity). We are expecting Network Rail to outline possible alternatives to the CUI as part of this work (which will feed into their consultation on the update to the capacity charge). It may that a number of measures might – taken together – be a more appropriate way of understanding use of capacity and the trade-offs with reliability or other output measures.

What the characteristics of a good measure might be

3.90 Because the issue of capacity utilisation is a complex one, a good measure of capacity will need many attributes, not all of which will necessarily be consistent with one another. These will include:

(a) **Simplicity**: Both Network Rail and its stakeholders will need to be able to understand in broad terms what precisely is being measured, and what its limitations are likely to be.

(b) **Context**: The measure will need to be consistent across a number of operational contexts so that capacity utilisation on a relatively simple route (for instance the suburban route into Marylebone) can be compared to capacity utilisation on a relatively complex route (for instance, around Clapham Junction).

(c) **Relevance**: A measure will need to be used to inform capacity-related charges, including the capacity charge. In order for it to be useful in this respect, a good statistical fit will be required between it and the CRRD measure, at an appropriate level of disaggregation.

Consultation questions

Q16. Do you have views on the introduction of a new measure of how Network Rail is developing its capability as a system operator, and what the measure should cover?

Change control and 'trade-offs'

3.91 We have considered whether to introduce a new change control process for CP5 outputs in addition to the formal change control process for enhancement projects which has worked well in CP4. Within a particular high level output such as PPM we also allow the trajectory for each train operating company to be flexed if the TOC and Network Rail agree.

3.92 But we do not allow 'trading' between high level outputs such as PPM and enhancement projects delivery. When deciding whether Network Rail has breached its licence if it fails to deliver an output we take a view on whether it has done all it reasonably can to deliver the output – we could in principle decide to change the required output level if we believe it cannot be delivered. In effect our decisions on how to interpret a failure to deliver an output offer some flexibility around the output level, but we could go further and allow Network Rail to formally propose a 'trade off' between outputs in CP5. For example the company could propose reducing one type of output obligation and increasing another if it believes this would offer better value for money. We do not believe this would be appropriate for HLOS outputs (unless government has signalled in its HLOSs that it wanted this). It could be more appropriate for outputs we have set, but this risks effectively reopening the balance that was set at the final determination in terms obligations, risk and funding. Hence we are not in favour of this option.

Consultation question

Q17. Should we have a mechanism to allow formal trade-offs to be made between high level outputs during the control period?

Whole industry scorecard

3.93 We want to ensure that Network Rail's performance is assessed in the context of the industry's **progress in achieving the outcomes** we want from CP5 by defining and publishing a **whole-industry scorecard**. This will encompass the measures that make a difference to passengers, freight customers, the businesses and communities which rely on rail, and taxpayers who provide funding.

3.94 We have defined one form of such a scorecard based on a vertical snapshot of industry performance covering measures from outcomes affecting industry's customers through to the revenues, subsidy and costs invested in achieving them. This might cover measures of:

(a) The **outcomes** we want the industry to achieve (passenger satisfaction – based on the national passenger survey, freight customer satisfaction – for instance as indicated by rail's share of the freight market etc.);

(b) The measures of the industry's success in terms of **volume** measures – the number of passengers choosing to travel, or the amount of freight shipped;

(c) **Supply** measures, the capacity of the service provided to achieve the volume; and

(d) **Industry finances** comprising industry revenues, cost and subsidy.

3.95 The scorecard would also include the output framework. The table below sets out the output areas – the key drivers – that we consider best support the outcomes we want to achieve.

Table 12: Key drivers of desired outcomes

Outcome	Key drivers	Basis
Passenger satisfaction	Value for money (of ticket) Train service reliability Train service frequency	Initial Industry Plan, Passenger Focus responses to Initial Industry Plan, which referenced research on passenger priorities[22]
Freight customer satisfaction	Price Reliable and consistent service Extended availability	Initial industry plans for Scotland and England & Wales[23]
Economic growth	Train service capacity (passenger & freight) Journey time Cost efficiency Business to labour force; business to business; business – supply of goods; business – markets)	HLOS

[22] Passengers' priorities for improvements in rail services, Passenger Focus, August 2010 http://www.passengerfocus.org.uk/news-and-publications/document-search/document.asp?dsid=4476

[23] http://www.networkrail.co.uk/iip.aspx

Outcome	Key drivers	Basis
Connectivity	Train service capacity End-end journey times Accessibility	HLOS
Environmental sustainability	Carbon emissions Cost efficiency (in support of mode shift, because rail performs well on many environmental impacts versus competing modes)	HLOS

3.96 We have incorporated these drivers into the proposed scorecard in the table below. Alternative structures for a scorecard might be based on:

- 'Background/benchmark measures' chosen to give context to industry performance based on factors outside the industry's direct control, such as economic growth, demand for transport across modes, or efficiency measures and input price inflation in other industries; and
- Opinion-based measures, including passenger and customer satisfaction but also satisfaction of wider stakeholders such as funders.

Table 13: Whole industry scorecard (GB wide, England & Wales, Scotland)

Output framework					
Outcome measures	Passenger satisfaction	Freight modal share	Support for economy (e.g. GDP growth, modal shares, ticket & freight revenue)	Connectivity (e.g. demographic breakdown of passenger #s, % passengers within x mins of town popln > 100,000)	Direct greenhouse gas emissions
Volume measures	Passenger journeys	Passenger kms	Freight tonnes lifted by market	Freight net tonne km by market	
Supply measures	Passenger train km	Passenger vehicle km	Freight train km	Freight vehicle km	
Industry finances	Ticket revenue	Freight revenue	Other revenue	Costs	Subsidy

Consultation questions

Q18. What do you think of the idea of a scorecard to provide context to our assessment of Network Rail's performance in CP5? Do you have views on our proposed scorecard, and do you have alternative suggestions?

Annex A: Background information

CP4 output framework

Overview

1. In PR08 we aimed to set obligations which measured the passenger or customer facing outputs resulting from Network Rail's or the industry's actions. Some of the outputs were defined in our PR08 determination document itself, others through our approval of Network Rail's delivery plan in 2009. We supplemented this output-based framework with indicators where we considered that there was no small set of measures which, if set as obligations, would give confidence of a good outcome for customers and funders. We also introduced two measures of enablers – measuring capability in safety and asset management – where we considered Network Rail's capability needed to improve to deliver higher outputs/lower costs in the medium term.

2. The table below summarises the measures which we set as outputs, enablers or indicators in CP4. The rest of this section describes the measures in more detail.

Table 14: CP4 output framework summary

Type of measure	Output area	Measure	Where set
Output	Reliability	Passenger performance measure (PPM) (national) and by sector for E&W	HLOS
		PPM by TOC	Delivery plan
		Proportion of trains cancelled or significantly late (CaSL) by sector in E&W	HLOS
		CaSL by TOC	Delivery plan
		Network Rail passenger train delay minutes (England & Wales, Scotland)	Determinations
		Network Rail freight train delay minutes per 100 train km (GB)	Determinations
Output	Network capacity	E&W HLOS metrics (capacity to be accommodated into specified cities/termini within given average load factors; and passenger km by strategic route)	HLOS
Output	Network capacity	Enhancement scheme milestones	Delivery plan
Output	Safety	(NR contribution to reduction in) fatalities & weighted injuries as measured by industry's RSSB safety risk model	HLOS
Output	Network availability	Passenger and freight disruption indices	Determinations
Output	Network capability	As described in Network Rail's sectional appendices, GEOGIS database, national	Determinations

Type of measure	Output area	Measure	Where set
		gauging strategy and route availability table for Scotland	
Output	Station condition	Average condition scores by station category	Determinations
Output	Depots stewardship	Average depot condition	Delivery plan
Enabler	Safety	Rail management maturity model improvement trajectories	During CP4
Enabler	Asset management	Asset management maturity scores	During CP4
Indicators	Safety	Passenger fatalities and weighted injuries per billion passenger km (from precursor indicator model)	Delivery plan
		Employee fatalities and weighted injuries per million hours worked (from precursor indicator model)	Delivery plan
Indicators	Environmental impact	Environmental sustainability index measures (6 metrics)	Delivery plan
Indicators	Asset condition	Asset condition indicators (17 measures)	Determinations, delivery plan and during CP4

Outputs

Reliability

3. The CP4 HLOSs specified that Network Rail should deliver improvements in the public performance measure (PPM), by the end of 2013-14, with sector based outputs in England & Wales and a national output for Scotland.

4. In England and Wales, the government specified reductions in cancellations and significant lateness by sector, again to be delivered by the end of 2013-14.

5. For both PPM and CaSL our determinations set trajectories (year by year targets) to supplement the HLOS output for the end of the control period, as in the tables below.

Table 15: Passenger train punctuality (% PPM)

	2009-10	2010-11	2011-12	2012-13	2013-14
Long distance	88.6	89.8	90.9	91.5	92
London & SE	91.5	92	92.4	92.7	93
Regional	90.5	91	91.5	91.9	92
Scotland (First ScotRail)	90.9	91.3	91.7	91.9	92

Table 16: Cancellations and significant lateness (% of services affected)

	2009-10	2010-11	2011-12	2012-13	2013-14
Long distance	4.9	4.5	4.2	4.0	3.9
London & SE	2.3	2.2	2.1	2.0	2.0
Regional	2.6	2.5	2.4	2.3	2.3
Scotland (First ScotRail)[24]	*2.0*	*1.9*	*1.8*	*1.8*	*1.7*

6. We set maximum levels for the passenger and freight train delay minutes for which Network Rail is held responsible:

Table 17: Network Rail delay minutes

	2009-10	2010-11	2011-12	2012-13	2013-14
Passenger train services (E&W)	6.27m	5.79m	5.43m	5.19m	4.98m
Passenger train services (First ScotRail)	436k	410k	391k	386k	382k
Freight services (GB, per 100 train km)	3.68	3.41	3.18	3.05	2.94

7. PPM, CaSL and delay minute outputs (year by year targets) for **individual operators** were set out in Network Rail's 2009 delivery plan and subsequent delivery plans.

Network capacity (enhancements)

8. The HLOSs specified some enhancement schemes. In England and Wales the HLOS also set out capacity measures for urban areas and London termini (peak three hours, high-peak hours and maximum average load factors) and for the 23 strategic routes (additional passenger km to be accommodated), some of which required network capacity to be increased. Some of the requirements were expressed in terms of funds e.g. the national stations improvement programme.

9. Network Rail's enhancements delivery plan defines Network Rail obligations in relation to the HLOS and PR08 more generally. It sets out the required completion dates and key milestones for schemes and is updated quarterly subject to a regulated change control process.

10. Other enhancement projects in the delivery plan (such as the Great Western electrification and EGIP) were not funded through PR08 but through our investment framework.

Safety

11. The DfT high level output specification (HLOS) included a 3% reduction in the risk of death or injury from accidents on the railway for passengers and rail workers for the whole of the British mainline network over the five years of CP4 (using the industry's RSSB safety risk model).

12. Network Rail has responsibility for delivering its own contribution, but not that of other parties. The company set out in its 2009 delivery plan two trajectories that will contribute to achieving the 3% reduction in safety risk as shown below.

[24] Scotland figures are Network Rail's internal targets.

Table 18: Safety

	2009-10	2010-11	2011-12	2012-13	2013-14
Passenger safety index (fatalities & weighted injuries per billion passenger km)	0.248	0.246	0.244	0.242	0.240
Employee health and safety index (fatalities & weighted injuries per million hours worked)	0.098	0.096	0.094	0.092	0.090

Network availability (reducing disruption from possessions)

13. Network Rail is required to deliver a progressive reduction in the disruption to passengers caused by its planned engineering activities such that by 2013-14 there is 37% less than in the base year (2007-08). For freight services there is to be no increase. The required trajectories in the two possession disruption indices[25] are set out below.

Table 19: Network availability

	2007-08	2009-10	2010-11	2011-12	2012-13	2013-14
Passenger possession disruption index (PDI-P)	1.00	1.02	0.91	0.83	0.68	0.63
Freight possession disruption index (PDI-F)	1.00	1.00	1.00	1.00	1.00	1.00

Network capability

14. Network Rail is required to maintain network capability as at 1 April 2009 as described in its sectional appendices, GEOGIS database and national gauging database. Capability is specified in terms of track mileage and layout, line speed, gauge, route availability and electrification type. Changes can be made through the industry network change procedure, and increases in capability are often delivered through enhancement projects.

Stations condition

15. Network Rail is required as a minimum to maintain average condition scores within each station category A to F across the network, and to maintain average station condition (across all categories) in Scotland. The baseline (minimum) levels of average condition below are based on Network Rail's survey data.

16. This obligation applies before taking into account improvements funded under the England & Wales national stations improvement programme.

Table 20: Station stewardship measure

All network	Minimum average at 1 April 2014
A	2.48
B	2.60
C	2.65

[25] Passenger index (PDI-P) measures the impact of engineering possessions in terms of the economic value of the excess journey time passengers experience, normalised by total train-km. The freight index (PDI-F) measures the 'unavailability' of track for freight use, weighted by the level of freight traffic operated over each section of track.

D	2.69
E	2.74
F	2.71
Scotland (all stations)	2.39

Depots stewardship
17. The current output is set out in the table below .

Table 21: Light maintenance depot stewardship measure

All network	Minimum average at 1 April 2014
England & Wales	2.52
Scotland	2.56
All LMDs	2.52

Enablers

Safety
18. ORR and Network Rail agreed that the key health and safety enabler would be the ORR rail management maturity model (RM3).

19. The model has five defined and calibrated core elements (with 26 sub-elements). For each of these sub-elements assessments are made on a five level maturity scale: initial/ad-hoc (1); managed (2); standardised (3); predictable (4); and excellent (5). Network Rail has identified nine priority areas for improvement. The trajectories for improvement in these priority areas are set out below.

Table 22: Rail management maturity model improvement trajectory

	2009-10	2010-11	2011-12	2012-13	2013-14
Leadership	3	3	3.5	3.5	4
Frontline management and supervision	2	2	2.5	3	4
Data analysis and learning	2	2	2.5	3	4
Competence	3	3	3	3.5	4
Internal communications	3	3.5	4	4	4.5
Risk management	2	2	2.5	3	3.5
Workforce involvement	2	2	2.5	3	4
Designing safety into the asset	2	2.5	3	3.5	3.5
Control of contractors	2	2.5	3	3.5	3.5

Asset serviceability and sustainability
20. The independent reporter AMCL assesses Network Rail's asset management maturity against its cross industry / international excellence model.

21. This model currently has 23 activities/enablers that are split into six core groups. Each activity/enabler is assessed on a hundred point maturity scale (banded into six maturity states: innocent (<5), aware (5-15),

developing (15-30), competent (30-45), effective (45-70) and excellent (70-100)). The reporter completed assessments against its model in 2006 and again in 2009.

22. The reporter, Network Rail and ORR have developed an agreed trajectory for Network Rail to reach best practice in asset management during CP4, recognising key milestones for the PR13 submissions to ORR.

Table 23: Asset management excellence model trajectory

Core groups	2009	IIP 09/11	SBP 01/13	CP5 04/14
Asset management strategy & planning	56	62	65	67
Whole-life cost justification	47	56	60	64
Lifecycle delivery	65	67	70	72
Asset knowledge	52	59	63	67
Organisation & people	63	67	71	74
Risks & review	50	53	58	61
Overall	56	61	65	68

Indicators

Safety

23. Year by year we review progress on the infrastructure component of the precursor indicator model, our enforcement activity, progress on corrective action and recommendations, near miss and all injury trends, safety tour feedback and the safe working index.

24. These trajectories do not have the status of customer reasonable requirements.

Environmental impact

25. There is no output requirement for Network Rail's environmental sustainability initiatives in CP4. However, Network Rail included in its 2009 delivery plan a series of indicators that we monitor. These are set out below.

Table 24: Environmental sustainability outputs

	2009-10	2010-11	2011-12	2012-13	2013-14
Operational recycling - stations, office & depot waste mass recycled or re-used	30%	40%	50%	55%	60%
Network Rail CO2 emissions - managed stations, offices & depots	-5%	-10%	-15%	-17%	-20%
Infrastructure recycling - renewals & enhancements waste mass recycled or reused	95%	95%	95%	95%	97%
Environmental incidents - leading to serious damage	6	6	6	6	6
Network Rail owned SSSIs rated favourable or recovering status - for 21 priority sites	75%	95%	95%	95%	95%

Water recovery - volume of ground / spring water recovered etc as % of total removed from tunnels	14%	14%	14%	14%	85%
Environmental sustainability index	6	7	8	9	9

26. The trajectories were revised in the 2010 delivery plan update.

Asset serviceability and sustainability

27. We did not set an output for Network Rail's asset serviceability and sustainability (except for the station stewardship measure) in our determination. Network Rail's compliance with its licence requirements is therefore tested against a dashboard of indicators, including both condition forecasts and activity plans set out in its CP4 delivery plan. The March 2010 delivery plan update gave the key component measures of this dashboard. These are set out below.

Table 25: Indicative asset condition measures (total network)

	2009-10	2010-11	2011-12	2012-13	2013-14
Good track geometry	137.3%	137.3%	137.4%	137.5%	137.6%
Poor track geometry	2.40%	2.40%	2.38%	2.36%	2.34%
Intervention/immediate action geometry faults /100km	40.0	39.0	38.0	37.0	35.9
Rail breaks and immediate action defects /100km	6.0	5.9	5.8	5.7	5.6
Civils assets subject to additional inspections	850	840	840	820	809
Signalling condition	2.39	2.39	2.39	2.39	2.39
AC traction feeder station track sectioning point condition	2.78	2.78	2.78	2.78	2.78
DC traction substation condition	2.53	2.53	2.53	2.53	2.53
AC traction contact system condition	1.6	1.6	1.6	1.6	1.6
DC traction contact system condition	1.9	1.9	1.9	1.9	1.9
Telecoms condition	0.89	0.89	0.89	0.89	0.89
Signalling failures (>10 min delay)	18,440	17,058	16,168	14,608	13,614
Points failures	7,691	5,570	4,420	3,388	2,871
Track circuit failures	6,291	5,570	4,973	4,180	3,857
Track failures	6,798	6,656	6,504	6,353	6,238
Power incidents (>300 min delay)	79	87	87	78	77
Telecom failures (>10 min delay)	774	742	721	656	644

Our first PR13 consultation

Consultation questions

28. In May 2011 we sought views on the type of output obligations we should set, in order to achieve the best outcome for rail users and wider stakeholders. We set out the choices we think we face in choosing output obligations, and the consequences as we saw them of those choices:

(a) we currently define required outputs e.g. percentage of trains on time but we could focus more on outcomes (such as passenger or freight customer satisfaction). The advantage of this would be that ultimately we are seeking better customer satisfaction and the percentage of trains on time is just a means to that end. However, it could be argued that it is difficult to set a stretching but realistic customer satisfaction target and that it does not provide Network Rail with a strong focus in terms of areas it must improve. Another different approach would be to specify inputs but this could take responsibility away from Network Rail and reduce efficiency improvements.

(b) In our monitoring of Network Rail we assess whether Network Rail is likely to deliver its outputs. We also review progress on enablers such as the company's approach to asset management (good progress on enablers can deliver higher efficiency and outputs in the medium term) and delivery of inputs such as renewals volumes against plan. We are reviewing the best approach to compiling and presenting alternative 'scorecards' of Network Rail's performance in CP5, including whether there are good composite measures of overall system performance.

(c) We have often defined required outputs through measures over which Network Rail has sole control (within the industry), such as Network Rail caused delay minutes. For CP4 we defined some requirements using whole-industry metrics (such as PPM), where delivery depends on both Network Rail and train operators. There are three advantages to this:

- these are good measures of service delivery to the end user (passenger or freight customer);
- it reflects Network Rail's responsibility for whole industry performance; and
- it can help to align Network Rail and train operator incentives more closely, as recommended by the vfm study – particularly if TOC commitments were to be expressed in similar terms and made enforceable by a single body.

(d) However there may be a risk that by doing this we weaken the incentive for Network Rail to perform, as responsibility for delivery is shared more widely across the industry. There is therefore a choice to be made about the right balance between setting whole system outputs and company specific outputs.

(e) There is a further consideration if outputs are to be set at a route level, as part of separate price controls. Some whole-industry outputs (e.g. PPM) cannot be easily or perhaps even meaningfully set at a route level, as they relate to train operating geography rather than network boundaries.

(f) There is also a choice over the level of detail outputs should be set at and how this then affects what action we take if Network Rail does not deliver them. Should we specify a small number of outputs with failure to deliver any one of these potentially being a serious licence breach, or a larger number of outputs (e.g. with a high degree of local disaggregation) which would tend to reduce the significance of failure to deliver any one output.

(g) looking specifically at safety, the DfT HLOS for PR08 specified a safety metric, in terms of reducing risk to passengers and workers. A decision will be needed on whether to set a specific safety target in CP5, which could be designed to achieve something which Network Rail (and the wider industry) is not already legally required to do.

29. We asked the following questions:

(a) Is the current approach to defining obligations in terms of outputs the best approach? What outputs should be defined? Should there be a move to more use of outcome based obligations? Would another approach be appropriate such as specifying inputs or intermediate measures?

(b) What are your views on how we should compile and present 'scorecards' of Network Rail's performance in CP5?

(c) Should we make more use of 'whole system' outputs over which Network Rail does not have full control, or focus on more narrowly defined outputs which the company is fully responsible for?

(d) How should output obligations be defined in the context of devolved Network Rail routes with separate price controls?

(e) How should the balance between the number of output obligations and their individual significance be struck?

(f) Should Network Rail's output obligations include a specific safety requirement, different from its legal obligations?

Responses to first PR13 consultation

30. The responses we received advanced a mix of views as to the type of output obligation we should set, echoing the advantages and disadvantages we had described in our consultation. Very broadly, consultees:

(a) Preferred output or outcome based measures unless there was some strong reason (e.g. that the delivery of the ‘outcome’ would be more likely given an input based obligation); and

(b) Supported whole-system outputs where incentives on individual organisations were aligned to deliver them (but there was scepticism that incentives were aligned in many areas).

31. In addition to the choices we described, consultees made a plea for simplicity and clarity of obligations – their effectiveness would be compromised if they were too complex to be communicated and understood easily.

32. One respondent suggested that there should be an outcome measure related to supporting the wider economy to underpin the key role of the railway in promoting growth.

33. It was also suggested there should be a mechanism to change output obligations where circumstances change significantly (particularly important if franchise terms are increased to 15 years); and that local funders needed a process for specifying and buying changes to the obligations. There was wide support for more localised output obligations, where this could be sensibly balanced with consideration of the network as a whole and cross-boundary services in particular.

34. There was very little backing for a specific safety output alongside Network Rail’s statutory obligations. Indeed, the Railway Safety & Standards Board (RSSB) specifically said that there should not be a safety improvement target for CP5, but a restatement of the general EU objective and a summary of the means by which this will be monitored to reassure the public that the industry continues both to take safety seriously and to seek further improvements.

Initial industry plans

35. The initial industry plans published in 2011[26] forecast outputs through CP5 and beyond using many of the measures which constitute the CP4 output framework, in particular

(a) Reliability was measured using PPM for passenger operators, and freight delay minutes per 100 train km for freight. The industry considered alternative measures of reliability (including those closer to the passenger's experience of delay, such as passenger rather than train based PPM, or measures of the proportion of trains arriving exactly at right time) but concluded:

- PPM is a train based measure and a good indicator of "passenger performance";
- passenger PPM is impossible to measure accurately; and
- alternative metrics weighted by passenger or station stops result in similar levels of reported performance; industry is already incentivised to focus on passenger lateness by the performance regime in track access contracts; and any measure is open to challenge that it isn't reflective of any single journey experience.

(b) Passenger capacity delivered by the IIPs was measured using the peak hour passenger-numbers/average load factor metric used in the DfT PR08 HLOS.

36. A forecast of greenhouse gas emission, tonnes of CO_2 emission from train traction energy, was included. The IIPs recommended though that this was not adopted as a target or obligation, because of potential perverse outcomes if increased rail costs led to movement of passengers or freight to more carbon-intensive modes of transport.

37. We had asked that the initial industry plans include a forecast of passenger satisfaction, and if a measure could be defined of freight customer satisfaction. The IIPs argued that because of the difficulty in forecasting such measures and the number of drivers of satisfaction outside the industry's direct control passenger satisfaction should be monitored but not used to set a target. In the case of freight customer satisfaction, the IIPs argued that it was difficult to construct a single metric of satisfaction because of the broad range of customer priorities in freight, and that anyway the competitiveness of the market for freight transport meant the incentive to improve freight customer satisfaction was already strong.

38. The IIPs said the industry considered it unnecessary for the DfT HLOS to include a metric relating to safety risk because the industry's legal and statutory obligations already provide organisations with a clear safety objective.

39. The IIPs said that the PDI measures of network availability were difficult to understand and to disaggregate, and that industry would work to propose alternative measures that addressed these weaknesses.

40. The industry considered but did not recommend the development of measures of journey time (for example for inclusion in HLOS) because of the complexity of developing such a measure (e.g. to take account of end-to-end rather than just station-to-station journey time) and the requirement to optimise use of the network (and so allow trade-offs between journey time and other desirable aspects of the train service).

[26] Available on Network Rail's website at http://www.networkrail.co.uk/iip.aspx