



Possible measures of the System Operator's performance

A consultation to inform
industry discussion

July 2017

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Summary



This document discusses possible measures that Network Rail's System Operator (the SO) could report on and be measured against over Control Period 6 (CP6, which will run from 2019-24). **It is intended to inform the SO's ongoing discussions with its stakeholders about its CP6 priorities and, in turn, what it should report on.** The SO will set this out in its SO strategic plan, which we expect to receive in late 2017.

It focuses on possible measures of the SO's performance relating to the activities it is directly accountable for, such as long-term planning and timetabling. It also considers possible measures of wider system operation performance – that Network Rail routes, funders, operators, and ORR undertake – for which the SO is not directly accountable but on which it could report.

This document supports our wider consultation on the Overall Framework for the 2018 Periodic Review (PR18).

Supporting a changing role for the SO

The SO plays a key role in the effective planning, operation and coordination of the rail system. For example, it produces timetables that have a significant impact on the services that operators, passengers and freight customers use. It also provides information and analysis to help inform decisions by funders, franchising

authorities, operators, and ORR about how the network could be used and developed over time.

This role is likely to become more important over CP6 and beyond. Demand for the network is likely to increase and, with continuing financial constraints, there will be a greater need to make effective use of the existing network. It is also important to ensure it is working coherently with the wider rail and transport system. At the same time, responsibilities will continue to devolve to local stakeholders, including the Network Rail routes (in managing the network) and local transport authorities (in franchising and funding decisions). This means that industry will increasingly rely on a SO that is proactive, transparent, evidence-based, and independent and impartial of any particular interests to help them deliver for passengers and freight customers.

For PR18, we want to support the SO to meet these challenges by setting a separate settlement relating specifically to its role. As part of this, the SO will need to report on its operational performance against certain measures. This will enable stakeholders to engage with the SO to agree priorities and challenge performance, and ensure we can hold it to account effectively.

Currently, however, the SO does not report separately on its performance and a very limited number of measures that Network Rail reports on directly reflect the SO's performance. This differs from the Network Rail routes, where there is a range of existing

measures in place around their operational performance, including those captured in the route-specific scorecards that Network Rail introduced during CP5. We discuss measures relating to the routes in our Route Scorecard consultation document, which we are also publishing as a supporting document to our Overall Framework for PR18 consultation document.

Developing SO measures that reflect its range of activities

To address this, we have worked with the SO and its stakeholders to identify a range of possible measures the SO could report on over CP6. This builds on feedback to our November 2016 consultation that set out some initial ideas in this area, as well as more recent discussions with the SO and its stakeholders, including at the Rail Delivery Group (RDG) system operation working group meetings.

Alongside this document, we are also publishing a longer list of possible SO measures. This discusses in more detail each of the measures, including their merits and limitations.

The measures we have identified with industry seek to reflect the range of activities the SO currently undertakes:

- Measures relating to enhancing the network seek to reflect the SO's role in strategic planning (namely leading industry's long-term planning process (the LTPP)) and in managing changes to what the network should deliver

(including managing enhancements to the network and informing franchising authorities about the provision of passenger services). We discuss measures in this area in chapter 3; and

- Measures relating to managing the allocation and use of capacity reflect the SO's role in overseeing industry's access to the network and in producing the timetable, as well as measures around how passengers and freight operators use the network. We discuss measures in this area in chapter 4.

We have also considered with industry possible performance measures relating to the SO's role in delivering customer satisfaction, effective financial performance of the SO (including on SO investment) and system safety. We discuss these measures in chapter 5.

The likely nature of the SO measures

Where possible, we have focused on measures that reflect those activities for which the SO is accountable. However, we also discuss possible measures that the SO cannot control but which may be of interest to its stakeholders; for example, the SO could report on measures relating to how capacity is used by passenger and freight operators (which would reflect decisions made by funders, franchising authorities, operators, and ORR). This reflects the important role the SO could play in informing wider system operation activities.

We have worked with Network Rail and industry to identify quantitative metrics for some of the possible SO measures. These are based on numerical values whose movement up or down is generally easy to understand in terms of whether it is 'good' or 'bad'. For example, a quantitative SO measure could record the number of delay minutes caused by errors in the SO's timetable. Other quantitative measures could be based on process or milestones that capture the SO's delivery against certain processes (e.g. inputting into franchising) or improvement plans (e.g. with respect to its IT systems or data).

In many other areas of the SO's activities, however, it is not easy or appropriate to identify or interpret quantitative metrics of the SO's performance. For example, measures relating to the *quality* of the SO's work with funders, franchising authorities and operators about how the network should be used or developed may be better understood as part of a wider discussion on its performance. Whether a measure is largely quantitative or qualitative will determine how the SO reports on it.

Possible use of SO reporting tools

The SO will need to focus on what measures it should report as part of its scorecard (a draft of which will form part of its strategic plan submission in December 2017) and which will need to be in place for the start of CP6. The scorecard lends itself to measures that the SO is directly accountable for and which are quantitative in nature.

However, the SO will also need to consider a role for qualitative performance reporting, such as through a new SO annual publication (e.g. a new SO annual return), to reflect the fact that not all measures are likely to be quantitative metrics.

Furthermore, the SO will need to consider other tools for reporting on wider system operation performance. This could help support the SO's wider objective to improve the use of the network.

Role of ORR-determined SO measures

We may require the SO to report on certain measures over CP6. These could be included in the SO scorecard or in other reporting tools. In deciding whether to set certain SO measures, we will consider the extent to which the SO has addressed its customer priorities and longer-term needs of the network in its strategic plan, including in the measures it proposes to report on over CP6. We discuss our initial thinking in this area in chapter 6.

Development of the measures over CP6

What (and how) the SO reports on may change over CP6. This could reflect changing SO and customer priorities, as well as likely improvements to the way the SO can identify and assess its own performance. However, in order to support ORR's monitoring, there will need to be a degree of consistency in the scorecard measures during CP6 (and when compared with the scorecard included in ORR's final determination). Any formal changes to the SO's settlement would be considered as part of our overall

approach to change control, as discussed in our Overall Framework for PR18 consultation document.

Next steps

The SO will continue to engage with its stakeholders to determine what measures it should report on over CP6.

To inform these discussions, we (and the SO) welcome feedback on the possible measures discussed in this consultation document, as well as on the questions set out in chapter 1.

Using input from this consultation and its ongoing stakeholder engagement, the SO will develop its priorities and proposed measures for reporting over the summer and autumn, before submitting its SO strategic plan and the draft SO scorecard to us in late 2017. Reflecting these timelines, we encourage stakeholders to continue to engage early and collaboratively with the SO in the development of its plan, including on the possible SO measures. For example, we would encourage respondents to this consultation to provide their feedback direct to the SO, as well as to ORR.

Please provide any responses to this consultation by **21 September 2017** to PR18@orr.gsi.gov.uk and (if you wish) to SystemOperatorMeasures@networkrail.co.uk. Further details of how to respond to this consultation are at the end of chapter 1.

1. Introduction



Background

- 1.1. The SO is a business unit within Network Rail that works with those who use and fund the network to ensure it operates in a coordinated manner. The SO is involved in:
- **Strategic planning** by leading the LTPP to inform funders' decisions about how the network should develop over the longer-term;
 - **Managing output changes to what the network delivers** by working with funders to consider, advise and manage where and how changes are made to the capability of the network and what that means to passengers and other rail users. This includes the SO's role advising franchising authorities about how the network might support their objectives for passenger services;
 - **Managing the framework for granting access rights** by informing our decisions (where necessary) about the access operators should have to the network and by managing how network capacity is allocated to operators and others;
 - **Producing the timetable**, including publication of the six-monthly working timetable and the day-ahead operational timetable; and
 - **Real-time operations, particularly with respect to how the network is used.** While Network Rail routes lead much of this (through signalling), the SO sets many of the policies

and rules for how the routes should operate. However, the SO alone does not determine how the network is used.

ORR's regulation of the SO

- 1.2. For PR18, we intend to set a separate settlement for the SO in order to:
- Encourage the SO to do a good job in planning and operating the system;
 - Support improvements to the SO's advisory role in wider system operation decisions (including those made by funders, operators and ORR); and
 - Empower the SO's stakeholders to engage with the SO in their role as customers (including to agree priorities and challenge the SO's performance, where necessary), alongside continued monitoring and regulatory action by ORR.
- 1.3. To facilitate these objectives, it is important that the SO reports regularly on its operational performance, to both its SO customers and wider stakeholders. This should provide greater focus on the SO's role and help demonstrate its independence and impartiality from other interests (including those of the Network Rail routes). This will be increasingly important as responsibilities devolve to routes and local funders.

1.4. The SO is not responsible for all system operation activities. For example, Network Rail routes also undertake system operation activities (including the day-to-day operation of the network through signalling); we grant access to the network; franchising authorities and operators determine what train services seek to run on the network; funders decide on the majority of enhancements to the network; and other infrastructure managers (such as HS2 and Crossrail) are responsible for the future capabilities of their infrastructure.

Purpose of this document

1.5. Currently, the SO does not report separately on its performance and a very limited number of measures that Network Rail reports on directly reflect the SO's performance.

1.6. To address this, we have been working with the SO and wider industry to identify and develop a range of possible measures. This thinking is set out in this document and in [Annex A](#), a spreadsheet that contains a long list of possible measures alongside some further discussion on the individual measures. **This is intended to inform thinking – by the SO and with its stakeholders – on what (and how) the SO could report on for CP6.** This list is unlikely to be comprehensive and we encourage the SO and its stakeholder to identify additional measures.

1.7. This consultation focuses on possible measures that reflect activities for which the SO is directly accountable. As such, the principal focus of this document is to inform:

- What measures the SO includes in its scorecard, a draft of which will form part of its strategic plan submission in December 2017 and which will need to be in place for the start of CP6. Reflecting the nature of scorecards, this is likely to include quantitative metrics for which the SO is directly accountable. Quantitative measures are based on numerical values whose direction up or down is easily understood; and
- What other measures the SO should report on outside of the SO scorecard. Some activities the SO is accountable for do not lend themselves to be measured in a quantifiable way, which could be easily included on the SO scorecard. This suggests there is a role for qualitative-based reporting such as through business plans and annual returns, for example.

1.8. As noted above, there are aspects of system operation that fall outside of the SO's accountabilities. Network Rail routes, funders, operators, and OR also undertake system operation activities.

1.9. Reflecting this, **this consultation also includes possible measures that the SO is not directly accountable for but which it could report on.** These are included to help inform industry's decisions relating to system operation, such as on the use of existing capacity.

Recent work to develop the measures

- 1.10. This consultation builds on our November 2016 [findings regarding the system operation issues, opportunities and future challenges](#). This set out the key issues we intend to focus on for CP6 and, in turn, which we expect Network Rail to take account of in developing its CP6 strategic plan.
- 1.11. It also builds on the initial ideas for measures of the SO's operational performance, as set out in our [November 2016 consultation](#) on the development of the regulatory settlement for the SO. A summary of the responses to that consultation is available [here](#). This discusses respondents' views on both the possible SO measures and other aspects of the design of the SO's settlement, much of which we address in our Overall Framework for PR18 consultation document.
- 1.12. This work also builds on the ongoing engagement with the SO and other stakeholders, including from the SO strategic plan workshop hosted by the SO on 16 May 2017 and the ongoing [RDG system operation working group](#) meetings.
- 1.13. In the context of developing its CP6 strategic plan, the SO will continue to engage with its customers and stakeholders, including on the development of the measures. **We hope this work will help inform those discussions.**

Interaction with the wider Network Rail determination

- 1.14. This document is published as a supporting document to our consultation on the [Overall framework for PR18](#). It sets out our thinking on how the regulatory framework will establish what Network Rail is expected to deliver (including the role of scorecards and our approach to them); the role of stakeholders in engaging with Network Rail; our role in holding Network Rail to account; and how to manage changes in certain circumstances. Unless otherwise noted, we expect these proposals to apply equally to the SO's regulatory framework as they do to the route settlements.
- 1.15. Alongside this document, we are also consulting separately on our thinking regarding [Route requirements and scorecards](#). We discuss some specific measures that we consider should be included on a route scorecard to enable comparison among routes. Reflecting the range of measures Network Rail routes already use when reporting on their performance (including through the existing scorecards), the work to develop the route-level measures is further progressed compared with the SO measures.

Next steps

- 1.16. To develop its CP6 strategic plan, the SO is currently engaging with its stakeholders. As part of this, it is also developing a SO scorecard that will need to be in place for the start of CP6. As discussed above, we expect this

consultation document to inform the SO's thinking in this area.

- 1.17. We expect to receive the SO's strategic plan and draft CP6 scorecard in late 2017. We will assess this, including the extent to which it reflects stakeholders' views. As part of this, we will also consider whether we should require the SO to report on any specific measures. Our early thinking on this is set out in chapter 6.
- 1.18. Over 2017 and 2018, we will develop the regulatory determinations and settlements, including for the SO.

Responding to this consultation

- 1.19. This consultation closes on 21 September 2017 (as does the consultations for the other documents we are publishing). Please submit your responses, in electronic form, to our PR18 inbox pr18@orr.gsi.gov.uk. You may find it useful to use [this pro forma](#) to structure your response to this consultation.
- 1.20. The SO is currently engaging directly with its stakeholders to seek their views on what it should include on its scorecard. To facilitate this, we would encourage you to send your response to SystemOperatorMeasures@networkrail.co.uk, if you would like to share your views directly with Network Rail.

- 1.21. We set out further details on the arrangements for responding (including on the treatment of confidential responses) in our Overall Framework for PR18 consultation document.

Consultation document questions

- 1.22. We have the following six questions:
- Question 1: Are there any substantive areas of the SO's activities that you consider are not outlined, and where its performance should be measured?
 - Question 2: What are your views on the measures outlined with respect to strategic planning and managing output changes? Are there any additional measures that you think would measure and incentivise the SO's performance in this area?
 - Question 3: What are your views on the measures outlined with respect to managing the framework for access rights, producing the timetable and the use of capacity? Are there any additional measures that you think would measure and incentivise the SO's performance in this area?
 - Question 4: What are your views on the SO management performance measures outlined, and are there any additional measures which you think would measure and incentivise the SO's performance in these areas? We would

particularly welcome suggestions on the SO's role in contributing to system safety.

- Question 5: What are your views on our proposed criteria for identifying possible ORR-determined SO measures?
- Question 6: What are your initial views on what measures, if any, ORR should consider setting as ORR-determined measures?

2. Approach to identifying and assessing possible SO measures



- 2.1. This chapter explains the approach we have used in working with the SO and its stakeholders to help identify and assess possible SO measures.

Existing SO measures

- 2.2. There are a limited number of measures relating to the SO's performance that it routinely reported on. However, the SO has undertaken some work to develop thinking in this area. For example:
- It previously published a bi-annual dashboard of system operation measures that reflected whole-industry performance (e.g. passenger satisfaction) and SO performance (e.g. delays caused by SO timetable errors); and
 - It has developed an SO management scorecard that it has begun to share with operators and funders, albeit on an informal basis.
- 2.3. With a separate settlement for CP6, the SO will need to report more comprehensively on its performance than it does currently and to a wider range of stakeholders. Consequently, further work is needed to identify a wider set of possible measures of the SO's operational performance.

Approach to identifying SO measures

- 2.4. In working with the SO and its stakeholders to identify possible SO measures, we have focused on two aspects of what the SO does:
- **Delivery of SO activities;** and
 - **Business management performance.**
- 2.5. This split reflects the distinction between attempting to measure, in the first instance, the success of the SO in delivering its activities, and secondly, ensuring that the SO is managed effectively.

A longer list of possible SO measures

- 2.6. The possible measures discussed in this document should be considered alongside Annex A. It sets out the full list of possible measures we and stakeholders have identified, and discusses each of them in more detail. It also includes a preliminary assessment of whether the SO is accountable for the measure; whether the measure is a quantitative metric or a qualitative measure; and our initial views on the likely merits and limitations of the measure, reflecting initial stakeholder input.

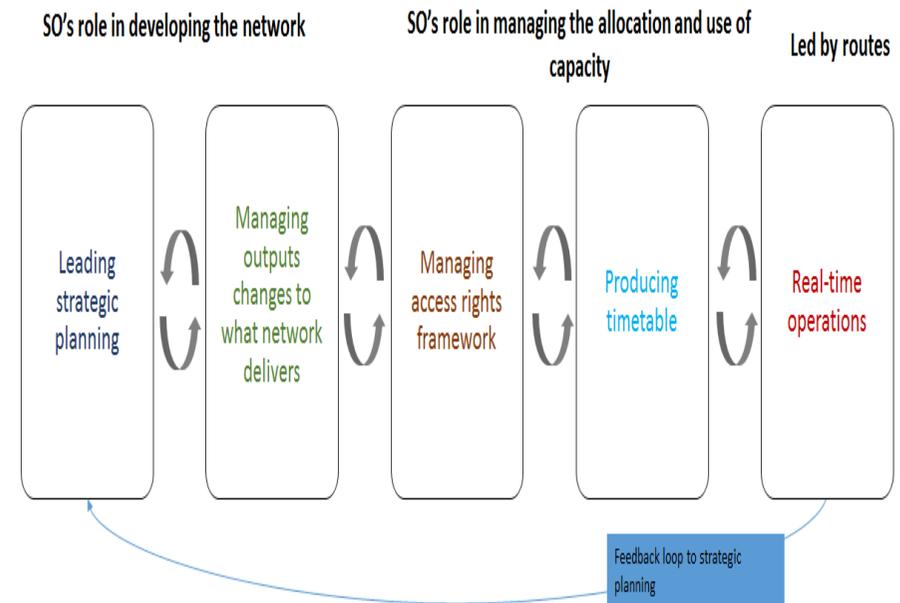
2.7. In Annex A, Table 1 sets out those measures that relate to the SO's activities and Table 2 sets out measures relating to SO's business management performance. We discuss this in further detail below. To help explain what measures relate to what activities, we use a range of colours to group the measures in both our Annex A spreadsheet and in this document.

Delivery of SO activities

2.8. The SO undertakes a range of activities. We previously set out our views on the scope and nature of these system operation activities.

2.9. However, our starting point for this document is how Network Rail has organised its business and to consider what activities the SO currently undertakes and the way it does this. Network Rail describes this as the SO operating model. This centres around five key activities, as illustrated in Figure 2.1.

Figure 2.1: The SO's operating model



2.10. As part of the SO's role in developing the network, the SO's activities relate to five key areas:

- 1) **Leading strategic planning:** The SO leads the LTPP, which presents options for how the network needs to develop over the longer-term (30 years hence). The LTPP identifies what changes to services or new infrastructure would be required to meet demand. We discuss measures in this area in chapter 3 of this document and set them out in **navy blue** in Table 1 of our accompanying Annex A spreadsheet; and

2) **Managing output changes to what the network delivers** (which Network Rail refers to as 'output changes'): These activities relate to the SO's role in decisions that change the nature or quality of the train service offered to rail users, including managing the enhancement portfolio and informing franchise decisions. We also discuss measures in this area in chapter 3 and set them out in **green** in Table 1.

2.11. As part of the SO's role in managing the allocation and use of capacity, the SO's activities relate to:

3) **Managing the access rights framework:** Although other parties are involved in this space (most notably franchising authorities who determine what franchise passenger services they want), the SO performs a key role in providing information on the availability of capacity on the network to inform access rights decisions, and makes some access decisions itself. We discuss measures in this area in chapter 4 and set them out in **orange** in Table 1;

4) **Producing the timetable.** We discuss measures in this area in chapter 4 and discuss them in **blue** in Table 1; and

5) **Real-time operations:** While the SO is not heavily involved in real-time operations (which is mainly a matter for Network Rail routes through signalling), how

the network operates in real-time reflects the success of the SO's role, albeit only in part. We also discuss measures in this area in chapter 4 and set them out in **red** in Table 1.

2.12. While the Network Rail routes also play an important role in managing the allocation of capacity and therefore the use of the network, the SO oversees and sets many of the policies and rules for how the routes should operate. Some of the measures discussed in this document reflect the SO's role in this area.

Measures of SO management performance

2.13. In addition to delivering its specific activities, the SO management will seek to ensure the service it provides is customer focused and cost efficient, and that it contributes to system safety in an effective way. We discuss possible measures in this area in chapter 5 and set them out in **purple** in Table 2 of our accompanying Annex A spreadsheet.

Measuring the capability of the SO

2.14. Delivering all these activities effectively will be dependent on the capabilities of the SO's people, processes, systems, and data. Assessing capability in these areas, including delivering improvements to them, is likely to be a key theme of the SO's measures.

2.15. Respondents to our November 2016 consultation supported the use of measures that would capture how well the SO is delivering improvements to its

capabilities. Stakeholders have also consistently said that they would like the SO to be able to produce the advice it provides (e.g. capacity studies) faster and with more accuracy and detail than it has in the past.

- 2.16. We expect that the SO will set out how it intends to improve its capabilities over CP6 in its strategic plan. Measures in this area are likely to reflect the milestones that the relevant improvement plan sets out. As these programmes should define their outcomes, the SO could report on whether the programme was successful in achieving its goals or not, whether any lessons can be learnt and whether further work is required.
- 2.17. Furthermore, it is likely that any new programmes identified and commissioned through CP6 would be reflected in the SO's measures.
- 2.18. In this document, we discuss the SO's initial ideas about what capability improvements it could undertake over CP6. We note, however, that this is subject to further thinking by the SO, including with stakeholders about their priorities.

Quantitative metrics and qualitative measures

- 2.19. Some of the possible SO measures are quantitative metrics (or numerical values) whose movement up or down is generally easy to understand in terms of whether it is 'good' or 'bad'. For example, a quantitative

SO measure could record the number of delay minutes caused by errors in the SO's timetable. Other quantitative measures could be process- or milestone-based that capture the SO's delivery against certain processes (e.g. inputting into franchising) or improvement plans with respect to certain capabilities (e.g. with respect to its IT systems or data).

- 2.20. However, for many of the SO's activities, it is not easy or appropriate to identify or interpret quantitative metrics of the SO's performance. For example, measures relating to the *quality* of the SO's outputs in working with funders, franchising authorities and operators about how the network should be used or developed may be better understood as part of a wider discussion on its performance.
- 2.21. Furthermore, not all quantitative measures are self-explanatory, whereby 'good' performance or a desirable outcome is easily recognisable. In some cases, even if a number can be attributed to a measure, context is required to understand the meaning of that number. For example, it may be possible to count the number of controlled changes made for an enhancement project that has arisen due to issues with SO-produced forecasts, but the number on its own would be unlikely to tell a full or informed story of the SO's performance, at least not without supporting context.

2.22. The nature of the measure will determine how the SO reports on it, including the nature of the tool it uses.

Possible SO reporting tools

2.23. As noted in chapter 1, the SO will have a scorecard in place for CP6. It will also need to consider other possible reporting tools it could make use of based on:

- Whether the SO is accountable for the measure or whether it is a measure that reflects the performance of other decision-makers; and
- Whether the measure is a quantitative metric or a qualitative metric that requires some commentary to understand it.

2.24. We set out the possible reporting tools, and how they could be used, in Table 2.1. For example, there may be scope for an annual publication by the SO on its overall operational performance (e.g. an SO annual return), as well as an updated system operation dashboard to report on industry-wide aspects of system operation.

2.25. For each of the measures discussed, we provide an indication of whether the SO is likely to be accountable for its delivery and whether the measure is a quantitative metric or a qualitative-based measure.

Table 2.1: Possible SO reporting tools by nature of measure

	Quantitative metrics	Non-quantitative measures
Activities which the SO is accountable for	SO scorecard	SO Annual Return Standalone reports e.g. benefit realisation reports SO business plans SO action plans
Activities which the SO is not accountable for (and which reflect role of other parties in system operation)	SO scorecard (with zero weighting assigned) An updated system operation dashboard Other Network Rail / ORR reporting	SO annual report(s) <i>This could include a general report on overall system operation and SO research/studies in specific areas (e.g. capacity use on particular routes/areas).</i>

Chapter 2 question

Question 1: Are there any substantive areas of the SO's activities that you consider are not outlined, and where its performance should be measured?

3. Measures of the SO's role in developing the network



3.1. This chapter considers possible measures relating to the SO's role in developing the network. The SO's responsibilities in this area include:

- **Leading strategic planning.** The SO leads the LTPP and makes recommendations (including to funders) about how the network could be enhanced (or, in some cases, used differently); and
- **Managing output changes to what the network delivers.** This includes the SO's role in decisions that change the output of the railway, including the changes in network capability and how it is used. The SO's role in this area include:
 - Leading early-stage development of enhancements;
 - Managing the overall enhancements portfolio;
 - Realising the benefits of enhancements; and
 - Informing franchising decisions.

3.2. We discuss each of these areas separately below.

Leading strategic planning

- 3.3. The LTPP looks at the capability of the network up to 30 years into the future. It identifies where there are shortfalls in network capacity (amongst other conditional outputs), and is an important means by which funders and the industry come to understand the future requirements of the network. It also proposes how the output requirements of the future (CP6 and beyond) can be delivered, including through how to make best use of the current infrastructure.
- 3.4. In leading the LTPP, the SO works with funders, operators, local transport authorities, and passenger and freight representatives to produce market, network and route studies. Through these documents, the SO forecasts the future requirements of the railway and identifies choices for funders to address them, in consultation with industry and third parties.
- 3.5. Figure 3.1 illustrates the main stages of the LTPP. A market study identifies areas of demand, with solutions (including infrastructure solutions) proposed in route studies. These options may then be added to the

enhancements pipeline, should funders choose to progress them.

Figure 3.1: The main stages of the LTPP



- 3.6. The SO does not select which projects are progressed, but it does have a key role in recommending changes to the network and how it will be used. Its recommendations are a key input to the Initial Industry Advice, which sets out industry’s high level priorities for enhancements during 2019-24 and which informs funders’ decisions about which projects to develop.
- 3.7. As noted in our November 2016 findings regarding the system operation issues, opportunities and future challenges, the SO’s role will become increasingly important and complex as the number and range of funders grows¹. Furthermore, and as noted in our July 2016 Working Paper 2, the LTPP may favour investment in new capital solutions over operational solutions (which may have an adverse impact on some parties).

¹ Page 11/12, ORR’s November 2016 findings regarding the system operation issues, opportunities and future challenges.

As such, measures in this area may help ‘shine a light’ on the LTPP and the SO’s role in long-term planning and, in turn, drive improvements.

- 3.8. Table 3.1 sets out some possible measures we have identified with stakeholders, including through previous consultations.

Table 3.1: Possible measures of the SO’s role in strategic planning

Possible SO performance measure	SO accountable?	Quantitative metric?
A1 Progress against planned milestones for LTPP studies	✓	✓
A2 Number of capacity improvements identified which don't require infrastructure investment (e.g. operational solution)/only requires a minimal investment (e.g. less than £1m)	x	?
A3 Demonstrable consideration of non-infrastructure solutions within all strategic planning documents	✓	✓

A4	Stakeholder satisfaction with LTPP (e.g. by way of a survey and comparison among market/route studies)	✓	✓
A5	Accuracy of forecasts contained within the LTPP, e.g. growth forecasts	✓	✗
A6	Quality of LTPP outputs	✓	✗
A7	Scale of the funding secured by the SO for enhancement projects	✗	✓
A8	Proportion of enhancements funded which had previously been included in the LTPP	✗	?
A9	Scale of third party funding secured by the SO	✗	✓
A10	Delivery of milestones against an improvement programme relating to the SO's capability in this area (if included in its strategic plan)	✓	✗

3.9. With respect to these measures, we note that:

- The long-term nature of network planning means that it is not possible to measure directly the eventual accuracy or quality of these plans. As such, the measures suggested herein mainly reflect the quality of the SO's processes and/or the inputs it uses in developing the studies. However, any milestone-based measures would not exist in isolation. They typically reflect progress against processes which already have their own quality assurance;

- There may be some opportunities to compare strategic planning across route studies, at the very least to ensure that lessons learnt are being properly implemented. There might, for example, be an opportunity to compare the extent to which different studies discuss opportunities for improving capacity use and/or ways of adding capacity that does not require substantial capital investment;
- Measures may need to reflect possible changes to the SO's approach to delivering long-term planning. For example, the SO is currently considering how it could the LTPP could be more flexible and responsive to franchising and funding decisions (through a so-called modular approach);
- There is likely to be a risk of perverse incentives associated with the SO reporting on certain measures. For instance, requiring the SO to report on how well it had secured project funding could encourage it to inflate business cases to make projects more attractive, which could undermine its role in providing stakeholders and funders with impartial and accurate information; and
- There is likely to be a particular role for qualitative reporting (e.g. via an annual report) in this area to help provide context and commentary around some of these measures.

Managing output changes

- 3.10. The SO does not select which interventions are progressed, but it does have a key role in recommending changes to the network and the services that use it, including through supplying timely and quality advice to inform funders' choices and franchise or access decisions.
- 3.11. Once a funder decides to progress an enhancement project (usually following identification in the LTPP) or to alter franchise specifications, the SO is responsible for managing these output changes to what the network delivers.
- 3.12. For the purposes of considering possible SO measures, we consider its four main activities to be:
- leading early-stage development of enhancement projects;
 - tracking funding and output commitments across the enhancements portfolio;
 - realising the benefits of enhancements; and
 - informing franchising decisions.
- 3.13. We address each of these activities below.

Possible measures of the SO's role in leading early-stage development of enhancement projects

- 3.14. The early-stage development of a project is often critical to its eventual success. Where development has not been completed in sufficient depth, funders can make decisions to progress projects which are then subsequently found to have unexpected risks, including of cost escalation. This was a key observation of the Bove review, which noted that much of the cost escalation of enhancements in CP5 was because they were committed to at a premature stage of development.
- 3.15. Box 3.1 discusses the SO's role in the early development of enhancements. After development, responsibility for delivering the project transfers to the Network Rail routes.

Box 3.1: The SO's role in the early development of enhancements

Network Rail works with funders to deliver enhancements to the network. At the development stage of a project², the SO:

- Identifies and reconciles the requirements of different parties (e.g. the varying needs of funders and the routes) and the network's strategic fit as a whole;
- Agrees the high-level outputs to be delivered;
- Secures the necessary funding, including managing the relationship with governments and third parties (e.g. Local Enterprise Partnerships);
- Leads the early-stage work to define and develop projects further; and
- Manages and maintains the 'pipeline' of early stage enhancements, recommending which projects should be prioritised for further development (taking account of funding constraints).

3.16. Table 3.2 below sets out some possible measures stakeholders and ourselves have identified relating to the SO's role in this area.

Table 3.2: Possible measures of the SO's roles in leading the early-stage development of enhancement projects

Possible SO performance measure		SO accountable?	Quantitative metric?
B1	Progress against planned milestones for development of projects e.g. against relevant Memorandum of Understanding milestones or relevant GRIP stages	✓	✓
B2	Quality of the early-stage development of projects	✓	✗
B3	Delivery of milestones against an improvement programme relating to the SO's capability in leading the development of projects	✓	✓

3.17. With respect to these measures, we note that:

² The development phase of a project has traditionally been considered as part of stage 1-3 or stage 4 in Network Rail's 'Governance for Rail Infrastructure Projects (GRIP)' process, which roughly aligns with the

completion of the Outline Business Case under the [Memorandum of Understanding between Network Rail and the DfT on rail enhancements](#).

- The suggested measures focus on milestones, although it may be possible to assess quality on a comparative or subjective basis across projects;
- In overseeing the enhancements delivery portfolio, the SO will help inform decisions about how and when projects should progress, but the final decision lies with funders. The measures suggested therefore centre on the accuracy of the information presented; and
- The SO may seek to develop the capabilities of its staff within this area and include this as part of a capability improvement programmes in its CP6 strategic plan. If so, a measure could reflect its progress against its plan.

Possible measures of the SO’s role in tracking funding and output commitments at portfolio level

- 3.18. Throughout the lifecycle of a project, the SO retains the responsibility for balancing the output commitments that have been made by Network Rail and the funding Network Rail has available to it.
- 3.19. For instance, the SO must be aware if the cost of a project is increasing, and have a view of whether it continues to represent value for money. The SO should also have an awareness of broader changes in circumstances, which might change the strategic prioritisation of projects across the portfolio.

- 3.20. The SO is not responsible for making decisions on which projects to prioritise (this ultimately rests with the funder), but it does need to provide timely and accurate advice to inform those decisions.
- 3.21. Furthermore, as noted in the [Bowe review](#) into its planning of enhancements programme, the re-classification of Network Rail means that the management of the overall portfolio is arguably more critical as overspends cannot be funded through borrowing. In some circumstances, projects could be de-scoped or deferred in response to a funding shortfall, and the advice of the SO will inform funders’ decisions in this area.
- 3.22. Stakeholders have repeatedly stated that the accuracy and transparency of Network Rail’s enhancement plans is essential for them to plan their businesses.
- 3.23. Table 3.3 sets out some possible measures in this area:

Table 3.3: Possible measures of the SO’s role in tracking funding and output commitments at portfolio level

Possible SO performance measure		SO accountable?	Quantitative measure?
B4	Proportion of Enhancement Delivery Plan change controls attributable to the SO's failings (e.g. poor analysis relating to timetable implications)	✓	?

B5	Proportion of Enhancement Delivery Plan change controls attributable to broader Network Rail failings (e.g. poor delivery)	✘	?
B6	Accuracy of the Enhancement Delivery Plan i.e. number of incorrect outputs or milestones	✓	?
B7	Extent of impact of enhancements on maintenance and renewal projects across the portfolio (e.g. impact on access and/or availability of equipment)	✘	?
B8	Delivery of milestones against an improvement programme relating to the SO's role in tracking funding and output commitments (i.e. in acting as the internal 'client' for projects)	✓	?
B9	Average benefit-cost ratio of any enhancements proposed from ring fenced funds	?	?

3.24. With respect to these measures, we note that:

- The SO is not accountable for the delivery of projects, but it is accountable for providing accurate and up to date information on the status of the portfolio as a whole. The possible measures discussed herein seek to reflect that;
- The impact of enhancements on renewals activity is already reflected when considering business cases, but is likely to be an area where it is increasingly important

that this analysis is undertaken and completed to a high standard, not least to support orderly change control when enhancement decisions are made within-period;

- While many of these possible measures could be expressed as quantitative metrics, it is likely that they would benefit from some commentary; and
- Regarding the measure relating to the benefit-cost ratio of any enhancements proposed (measure B10), there may be certain limitations with benefit-cost ratios (e.g. they may fail to capture certain strategic or societal benefits) and their use as a metric might distort incentives to complete the analysis in a neutral way.

Possible measures of the SO's role in realising the benefits of enhancements

3.25. Once the physical work of an enhancement project is complete, the SO is responsible for ensuring that the benefits are realised, primarily through integration into the timetable.

3.26. In their response to our November 2016 consultation, stakeholders (including passenger and freight operators and regional transport bodies) suggested that Network Rail has at times declared an enhancement complete without demonstrating that the actual business case benefits have been realised.

3.27. We note that Network Rail is planning to increase the rigour and transparency of benefits tracking throughout the project lifecycle through its end-end planning process; further details of the SO's ideas for this is discussed in Box 3.2.

Box 3.2: The SO's work to improve its end-to-end planning process

The SO's operational model aims to provide an end-to-end service from long-term planning right through to allocation of paths in the national timetable. The End to End Planning Programme examines how the SO's operating model (and the processes that support it) could be improved to ensure that it is fit for purpose.

The key objectives are:

- To improve the line of sight between long-term planning and timetable delivery and to consider how this can be identified and articulated via change control processes;
- To articulate the SO's operating model for planning and allocating capacity, building on recent work; and
- To identify and understand barriers to delivery in those examples where capacity allocation does not match the original strategic plan agreed with stakeholders. For example, better understanding when, where and why changes occurred, and stating the effects of the changes on benefit realisation.

3.28. The SO is also responsible for making available information about the current state of the network to stakeholders, ensuring that the published capability matches the physical state of the network. This is particularly important when projects take place. The SO owns the network change procedure that must be followed if Network Rail wants to make a change to the network's capability, although the SO will not always be responsible for producing the actual documentation (route teams will also have this responsibility at times).

3.29. Table 3.4 below sets out some possible measures of how effectively benefits are realised and integrated into the timetable.

Table 3.4: Possible measures of the SO's role in realising the benefits of enhancements

Possible SO performance measure		SO accountable?	Quantitative metric?
B10	Variance between forecast benefits of an enhancement (including any change control) and the final benefits realised after completion	✓	✗
B11	Timeliness of benefits delivered according to the plan (including any agreed change controls)	✓	✓
B12	Compliance with the network change process (i.e.	✓	✓

	maintenance of network change documentation)		
B13	Delivery of milestones against an improvement programme relating to end to end planning	✓	✓
B14	Accuracy of the sectional appendix (e.g. number of errors identified by operators)	✓	✓

3.30. With respect to these measures, we note that:

- The ultimate realisation and use of the benefits may not always be within the SO's (or Network Rail's) control; for example, an uplift in trains per hour may be dependent on new rolling stock. However, the SO can play a key role in explaining these changes when they occur;
- Stakeholders have put a repeated emphasis on the importance of transparency regarding the progress of enhancements, accepting that change happens but noting that they need a reliable understanding of enhancements to plan their businesses;
- The benefits of projects are not all the same, nor expressed in the same units (e.g. one scheme may increase capacity, another might reduce journey time), leading to challenges in comparison. As such, qualitative reporting of the SO's role may be of more use to stakeholders on a programme by programme basis;

- Improved reporting could provide an alternative to some of these measures. For example, publishing a benefits realisation statement following an enhancement (backed by a measure of whether these publications have been completed in a timely way) could add additional scrutiny to the overall process; and
- The SO is not always accountable for producing network change information or updating information on the network. However, as it owns the policy, it could audit compliance across other parts of Network Rail.

Possible measures of the SO's role in informing franchising decisions

- 3.31. Changes in what the network delivers are not only achieved through major infrastructure investments. The franchising process can often lead to substantial alterations in service levels as part of operators' bids, and ultimately affect how the network is used.
- 3.32. Franchised operators run the vast majority of passenger rail services. Decisions around the requirements set out in franchise agreements therefore have a major impact on end user experience. In England & Wales, the Department for Transport (DfT) runs the franchising process for mainline railways, increasingly in cooperation with regional transport authorities and the

Welsh government. In Scotland, Transport Scotland runs the franchising process.

- 3.33. The SO is therefore not accountable for the decisions that goes into a franchising specification, but it is accountable for supplying good quality analysis to support informed decisions. In addition to providing information about what the network is capable of, the SO also assesses the quality of timetable bids from prospective operators.
- 3.34. Table 3.5 below sets out some possible measures which could be applied to the SO's role in franchising.

Table 3.5: Possible measures of the SO's role in informing the franchising process

Possible SO performance measure		SO accountable?	Quantitative metric?
B15	Progress against franchising authorities' milestones relating to the SO input	✓	✓
B16	Variance between the advice provided by the SO to franchising authorities and the final train service agreed (or something similar to this)	x	x
B17	Quality of advice provided to franchise authorities	✓	x

3.35. With regards to these measures, we note that:

- The SO does not make the final decision on franchise specifications;
- Assessing the quality of its advice is extremely difficult; this may be best captured through a satisfaction measure; and
- There could be scope for agreeing a more formalised process in this area, similar to the memorandum of understanding between the DfT and Network Rail around enhancements. This could help provide clarity to both parties (as well as the franchise bidders) and provide a basis for SO reporting in this area.

Chapter 3 question

Question 2: What are your views on the measures outlined with respect to strategic planning and managing output changes? Are there any additional measures that you think would measure and incentivise the SO's performance in this area?

4. Measures of the SO's role in managing the allocation and use of capacity



- 4.1. This chapter considers possible measures relating to the SO's role in the allocation and use of capacity.
- 4.2. The SO is responsible for managing the allocation of capacity on the network. This includes:
 - **Managing the framework for granting access to the network.** The SO provides information and analysis to industry and to us, to inform decisions about who should be granted what access to the network. It also manages overall capacity allocation to operators and Network Rail routes (e.g. for possessions); and
 - **Producing the timetable**, including the six-monthly working timetable and the operational timetable that sets out the services that should run on the following day.
- 4.3. The SO also influences real-time operations regarding **nearer-term use of the network**. However, it does not determine how the network is used in isolation, as Network Rail routes, funders, ORR, and operators play a significant role here.

Managing the framework for granting access to the network

- 4.4. As part of managing the framework for granting access to the network, the SO:
 - Undertakes analysis to inform industry about medium-term use of capacity, including for ORR's decisions on track access applications (e.g. the SO's 2014 East Coast 2020 capacity study that was produced as part of our decision on track access between franchise and open access operators);
 - Where appropriate, proposes how capacity should be allocated over the medium-term (including inputting into the Sale of Access Rights (SoAR) panel, which manages the delivery and sale of access rights); and
 - Produces an annual [Network Statement](#) that sets out the information existing or prospective operators are likely to need in order to operate train services.
- 4.5. In our 2016 findings document on the **system operation issues and opportunities**, we said the SO could improve its capability in capacity analysis that could, in turn, better inform our capacity allocation

decisions³. Industry has also suggested that the SO could be more proactive and responsive in the way it allocates capacity, with some operators saying that the SoAR panel processes need to be more streamlined and responsive in how they agree the sale of access rights⁴.

4.6. We set out some initial ideas for measures in this area in our November 2016 consultation. In their responses, stakeholders indicated support for more transparent and proactive reporting from the SO about its initiatives to manage capacity efficiently. For example, a freight operator suggested that the SO could be quicker to identify and manage strategic capacity, arguing that there was scope for more efficient freight paths to be made available. Some stakeholders were also supportive of more ongoing optimisation of timetables as a means of unlocking additional capacity (e.g. ‘root and branch’ reviews), whilst also acknowledging the substantial work associated with these initiatives.

4.7. Table 4.1 sets out some suggested ideas for how we could measure the SO’s role in this area.

Table 4.1: Possible measures of the SO’s role in managing the framework for granting access to the network

Possible SO performance measure		SO accountable?	Quantitative metric?
C1	Quality of advice regarding availability and use of capacity (including Network Rail studies)	✓	✗
C2	Level of available strategic capacity across the network and its change over time	✗	?
C3	Timeliness and quality of Network Rail advice to ORR on track access decisions	✓	✓
C4	Delivery of milestones against an improvement programme relating to provision of information on capacity availability/use	✓	?
C5	Timeliness of SoAR Panel decisions (e.g. against pre-agreed service level targets)	?	✓
C6	Level of 'strategic' capacity offered to freight and its change over time	✗	✓
C7	Level of additional capacity/paths created (both Freight and Passenger)	✗	✓

³ Page 8, ORR’s November 2016 findings regarding the system operation issues, opportunities and future challenges.

⁴ A number of operators raised this point at the SO strategic plan workshop on 16 May 2017.

C8	Delivery of milestones against an improvement programme relating to management/ allocation of capacity	✓	✓
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4.8. Overall, this looks to be a particularly important area for the SO to report on, as the quality and timeliness of the SO's information and decisions about the potential availability and use of the network have a significant impact on the services that passengers and freight customers can make use of.

4.9. However, with respect to these measures, we note that:

- Measures relating to the SO's role in making capacity available need to be considered alongside the punctuality of existing services (i.e. performance), given there is a trade-off between the two;
- The SO's customers need to consider a range of measures (both in respect of this activity and the SO's wider role in allocating capacity) to gain an insight into how 'effectively' the SO is producing and allocating capacity. No single measure is likely to suffice because there are often inherent trade-offs to be made between objectives. This suggests a range of measures may be required;
- Some of the measures (e.g. an assessment of the 'quality' of any SO capacity studies (measure C1), availability of strategic capacity (measure C2)) are likely

to be less objective. They may lend themselves to be reported on a qualitative basis, with corresponding commentary and analysis (e.g. via an annual report);

- Some of these measures focus only on the SO's compliance against milestones/timescales (e.g. timeliness of SoAR Panel decisions (measure C5)), which have some limitations, as discussed in chapter 3. Furthermore, a measure on the timeliness and quality of the SO's advice that we use to inform our track access decisions (measure C3) could require a formal process to be agreed between us and the SO (possibly supported by a Memorandum of Understanding or set out in a code of practice on what customers can expect, for example); and
- There may be benefit in the SO reporting on its work to improve its capabilities in this area, though this could be combined with the SO's activity in producing the timetable.

Producing the timetable

4.10. The SO is responsible for producing the timetable. This includes:

- Production of the working timetable, which shows all train movements planned to operate over the network for a six-month period. The SO is required to follow industry processes (as set out in the Network Code) to ensure the timetable is produced in a timely way. In

doing this, it works with operators (including by way of formal consultation) to consider what services they want to run. It also considers planned possessions; the timetable planning rules (TPRs); and any temporary restrictions in place in parts of the network (e.g. speed restrictions); and

- Production of the operational timetable, which is the amended version of the working timetable applicable for each day. This includes managing nearer-term requests for access (e.g. from a freight operator).

4.11. In our 2016 finding on the system operation issues and opportunities, we suggested that the SO’s role in this area could be more effective at unlocking benefits, both in terms of capacity use and performance⁵. We pointed to the fact that:

- Timetabling is generally incremental (focused on delivering existing service patterns);
- Input data to the timetable (namely the TPRs) are often out of date;
- The timetables contain conflicts (e.g. 3.1% of all delay minutes were caused by timetable errors in 2016/17); and

- There is scope for the overall process to be more automated.

4.12. We set out some ideas for measures in this area in our November 2016 consultation. In general, respondents were very supportive of having measures in this area. They said measures should capture the SO’s work to improve the TPRs; to deliver a timetable passengers can rely on 12 weeks in advance (T-12); and to implement more sophisticated approaches to producing the timetable (e.g. use of ‘big data’, sensitivity analysis).

4.13. Table 4.2 sets out some ideas from stakeholders and ourselves for possible measures in this area.

Table 4.2: Possible measures of the SO’s role in producing the timetable

Possible SO performance measure		SO accountable?	Quantitative metric?
D1	Delivery against the Working Timetable production milestones	✓	✓
D2	Level of 'late changes' to timetable (after T-12)	x	✓

⁵ Page 8/9, ORR’s November 2016 findings regarding the system operation issues, opportunities and future challenges.

D3	Number of delay incidents as a result of timetable errors (referred to as reason code 502a delay incidents)	?	✓
D4	Quantum of incidents caused by timetable errors	✓	✓
D5	Quantum of 502a delay minutes/train miles	✓	✓
D6	Assessment on the top 502a delays e.g. by route, service operator	✓	✗
D7	Level of dwell time inconsistencies measured by variance between timetabled and actual dwell times	✓	✓
D8	Number of conflicts in the Working Timetable, possibly measured by change over time	✓	✓
D9	Level of 'inevitable' TT delay, e.g. where delays will occur even in ideal operating conditions	✓	✓
D10	A comparison of Sectional Running Times and actual run times	✓	✓
D11	Timeliness of SO's review of TPR(s) in response to request by stakeholder	✓	✓
D12	Percentage of possessions not utilised by Network Rail	✗	✓
D13	Extent of adherence (e.g. number of breaches) to the Access Framework Principles (a set of planning guidelines/governance structure to inform when possessions should be	✓	✓

	undertaken, including their coordination across routes)		
D14	Delivery of milestones against an improvement programme relating to production of the timetable	✓	✓
D15	Responsiveness of SO in responding to short-term (STP requests) for access	✓	✓
D16	Responsiveness of SO in responding to customer questions regarding network capability	✓	✓
D17	Delivery of short-term planning milestones (e.g. A for C)	✓	✓

4.14. It looks to be important to have some measures in this area, reflecting the importance of creating effective timetables and that many of the potential measures reflect activities the SO is directly accountable to industry for (albeit with significant engagement with its customers).

4.15. However, we note that:

- Measures relating to delay minutes caused by timetable errors (termed '502a errors') do not reflect the actions Network Rail routes may take (through signalling) to address and/or mitigate the impact of timetable errors; and

- Some of the measures are likely to be resource-intensive to develop (e.g. level of dwell time inconsistencies (D7), the number of conflicts in the timetable (D8)). This reflects the limitations of the SO's timetabling systems, at least currently. However, we understand that the SO is seeking to improve the timetable and has an aspiration of moving to a zero-defect timetable; some of its ideas in this area are discussed in Box 4.1. The SO's early work to develop capacity-related measures (as discussed in Box 4.2 below) could also inform industry's understanding of the SO's performance in producing the timetable.

Box 4.1: The SO's work to improve its timetabling activity

The SO is developing certain programmes of activity with an aim to move towards delivery of a zero-defect timetable, at an affordable cost and overtime. It is seeking to do this by:

- Developing and deploying a pan-industry timetable data strategy to allow all participants to model, analyse and exchange data electronically. The SO expects this to facilitate quicker and more accurate decisions regarding capacity and timetabling;
- Collaborating with customers and stakeholders to deliver agreed end-to-end planning processes. The SO

is seeking to use both a single industry data set and a single methodology for technical running times and conflict detection. This could remove the need for TPRs and Sectional Running Times so that there is a so-called "one version of the truth"; and

- Working with route businesses and customer to understand the trade-offs they wish to pursue during timetable production e.g. accepting there might be a trade-off between high frequency timetables, high performing timetables, fast timetables, and access to assets.

Use of capacity

4.16. The SO is not solely accountable for many aspects of how capacity is used. Most of these decisions are made by funders, franchising authorities, operators, and ORR. However, there may be merit in the SO reporting in this area for two reasons:

- The SO should play a role in ensuring that there is an appropriate balance between making capacity available to train operators and to Network Rail's own maintenance, renewals and enhancement activities. This is an important aspect of ensuring that network-wide benefits are protected; and

- The outcome of its activities discussed above play an important role in influencing how capacity is used. More generally, the use of capacity is an important aspect of system operation, and the SO is critical to this.

4.17. Indeed, respondents to our November 2016 consultation stressed the importance of having better information about how capacity is used. They suggested that it could inform funders', franchising authorities', operators', and ORR's decisions about how the network is and could be used, including the trade-offs involved. For example, they pointed out that the SO could play a role in informing a decision to impose a standardised stopping pattern on a service, which could increase the capacity in use on the line but could also give rise to increased journey times for that service.

4.18. Table 4.3 sets out some ideas for how we could measure capacity use and other aspects of system operation that the SO could report.

Table 4.3: Possible measures of the SO's role in making effective use of the capacity

Possible SO performance measure		SO accountable?	Quantitative metric?
E1	Number of journey time or line speed improvements identified	x	?
E2	Measure train metres/hour (possibly across network or at a range of locations on the network)	x	✓
E3	Delivery of milestones against an improvement programme relating to use of capacity	✓	✓
E4	Ratio of capacity in use to notional capacity (see Box 4.2)	x	✓
E5	Number of scheduled passenger trains per weekday	x	✓
E6	Number of train km (could be split passenger/freight)	x	✓
E7	Volume of freight carried e.g. KGTM and/or its changes over time	x	✓
E8	Number of new freight services created	x	✓
E9	Proportion of freight paths refused due to lack of capacity	x	✓
E10	Proportion of working timetable freight paths utilised	x	✓
E11	Average speed of freight paths	x	✓

4.19. With respect to these measures, we note that:

- As above, measures relating to the use of capacity need to be considered alongside the punctuality of existing services (i.e. performance), given there is a trade-off between the two;
- Any measure of the 'effective' use of capacity is highly subjective and reflects the competing priorities (and resulting trade-offs) of those who fund and use the network. A timetable that works well for a commuter service operator may not work well for an intercity operator, for example. Different parts of the network will also have different priorities (e.g. Transport Scotland said in its High Level Output Specification that it wants to see improved journey times in Scotland). This may suggest that a wider range of measures is likely to be preferable, including ones that are disaggregated to particular customers (e.g. passenger service, freight service);
- Reflecting the fact that the SO is also not solely responsible for determining how capacity is used, measures in this space are likely to be most relevant when considered over time; and
- The ratio of capacity in use to notational capacity (measure E4) could provide industry and us with further information about how the network is used; we discuss this further in Box 4.2.

Box 4.2: The SO's work to develop possible capacity measures

Building on the study undertaken by consultants TRL on [options for capacity measures/metrics](#), which we published earlier this year, the SO intends to undertake a trial to consider how notional capacity compares with capacity in use.

Notional capacity refers to the number of trains that could potentially run on a route at a minimum safe distance and as a result of the physical nature of the infrastructure. Capacity in use refers to the number of services that are scheduled to run given the network infrastructure, the timetable planning rules, the rolling stock available, and the timetable itself.

The SO is considering how the planning headway values in the TPRs and the Sectional Running Time values could be used to calculate notional capacity. When compared with capacity in use, such a measure could improve industry's understanding around the use of the network, which in turn might help to identify future opportunities to improve utilisation of the network.

Given the SO's limited role in determining the final use of the network and the difficulty in assessing what the optimal use of the capacity looks like (more trains is not always better, for instance), we would not expect the SO's performance would be assessed solely against this measure. However, the measure might provide useful information to understand where the SO

has successfully improved outcomes. Reflecting this, the SO could lead the development of such measures (assuming industry found the measure(s) helpful and it was cost-efficient for the SO to develop it/them). The SO could then report on its progress in developing such measure(s) against agreed programme objectives/milestones.

Chapter 4 question

Question 3: What are your views on the measures outlined with respect to managing the framework for access rights, producing the timetable and the use of capacity? Are there any additional measures that you think would measure and incentivise the SO's performance in this area?

5. Measures of SO management performance

5.1. As with any part of Network Rail, stakeholders (and ORR) will want assurance that the SO is being managed effectively. In particular, that it is:

- Cost-efficient;
- Customer focussed; and
- A contributor to a safe network.

5.2. This chapter considers possible measures in these areas. These are set out in **purple** in Table 2 of our accompanying Annex A spreadsheet.

SO's financial performance

5.3. As part of Network Rail, the SO has a duty to ensure its expenditure is efficient and is delivering benefits to those who fund it.

5.4. Compared with Network Rail routes, the level of SO spend is small; the SO estimates that it was around £25m per annum in operating spend and £8m in capital spend in 2015/16). However, the significant role the SO plays in managing the wider network means that relatively small changes to the SO's spend could have significant implications for its customers.

5.5. As reflected in our November findings, stakeholders want more investment in the SO's people, systems, processes, and data to ensure it can meet the future needs of its customers. To help support this, stakeholders also want more transparency over the funds available to support the SO's activities.

5.6. As discussed in our November 2016 consultation, we are considering whether the SO should have a specific regulatory asset base (RAB) that would mean that the SO's capital investment would be reflected and capitalised in an SO-specific RAB. We intend to set out our proposals on this idea later this year, as part of further thinking on Network Rail's financial framework.

5.7. Table 5.1 sets out some possible measures in this area.

Table 5.1: Possible measures of the SO's financial performance

SO performance measure		SO accountable?	Quantitative metric?
X1	Total Financial Performance Measure efficiency generated	✓	✓
X2	Actual v forecast spending in last period (OPEX and CAPEX)	✓	✓
X3	Value of current SO RAB (if applicable)	✓	✓

5.8. In addition to the above measures, we will evaluate the costs proposed in the SO's strategic plan. We will consider whether they appear sufficient to deliver the activities planned, taking account of likely efficiency. We will reflect this in the SO's settlement.

SO customer satisfaction

5.9. In line with our overall framework for regulating Network Rail, we expect the SO to focus on delivering high standards of service to its customers, and meeting their requirements where it is reasonable to do so.

5.10. The SO and its stakeholders have suggested that feedback from the SO customers about the quality of the service they receive from the SO will be important in determining how effectively the SO is performing, including how this changes over time.

5.11. The SO's list of customers is extremely broad, spanning operators, funders (governments, local authorities and third party investors), franchising authorities, and the Network Rail routes themselves. At times, trade-offs will need to be made between the competing priorities of these customers. The SO plays a key role in ensuring these trade-offs are made appropriately and in a transparent manner.

5.12. It will be important for the SO to consider the feedback of its stakeholders, and seek to improve its performance where necessary. Furthermore, it may be possible to compare the SO's customer satisfaction with the Network Rail routes' customer satisfaction, enabling us and stakeholders to identify good practice and/or challenge where improvements could be made.

5.13. As the interests of different customer groups are likely to be extremely different, it may be beneficial to disaggregate stakeholders' experience and report the measures on that basis. It will also be useful to measure satisfaction with individual processes as well as overall satisfaction.

5.14. Ultimately, it is for the SO, in dialogue with its stakeholders, to identify the best way to measure their satisfaction. Furthermore, customer satisfaction may not be best reflected as a single measure.

5.15. Table 5.2 sets out some possible ways in which customer satisfaction could be disaggregated.

Table 5.2: Possible measures of SO's customer satisfaction

SO performance measure		SO accountable?	Quantitative metric?
Y1	Customer satisfaction - generic	✓	✓
Y2	Customer satisfaction - operators	✓	✓
Y3	Customer satisfaction - routes	✓	✓
Y4	Customer satisfaction - funders and local governments	✓	✓
Y5	Customer satisfaction - specific processes	✓	✓

5.16. With respect to these measures, we note that:

- There is a risk that customer satisfaction measures become conflated with customer's satisfaction with Network Rail as a whole, and thus fail to measure the performance of the SO specifically;
- It may be difficult for those providing feedback to distinguish the quality of the SO's delivery from the decisions that the SO eventually makes; and

- Feedback may be most effective where it focusses on a customer's experience with a specific service or process, and is collected on a regular basis shortly after the customer's experience.

Safety and sustainability

5.17. The SO, along with the rest of Network Rail, is part of a safety-critical industry.

5.18. As a minimum, we expect the SO to measure the health, safety and wellbeing of its own staff, probably using similar metrics (such as 'close calls' etc.) to the rest of Network Rail. However, we do not consult on these here, as the SO is best placed to identify the measures that are most applicable to its own, mainly office based, staff.

5.19. In general, the SO's activities are different to that of the routes, for instance it does not manage physical infrastructure or have a large workforce engaged in on-track works. Safety measures for the routes are expected to be largely outcome based (e.g. number of accidents). However, the SO's influence on safety is felt further upstream (and is thus much harder to isolate and measure), for instance in the safe planning of operations or development of enhancements.

5.20. Table 5.3 sets out some possible measures of system safety and the SO's contribution to it. These possible measures attempt to capture where the SO contributes to overall system safety or areas where it may be best placed to report on (but not be held accountable). They also try to capture the SO's influence on sustainability (in the broadest sense, rather than asset sustainability, which sits with the routes).

Table 5.3: Possible measures of the SO's contribution to system safety

SO example performance measure	SO accountable?	Quantitative metric?
Z1 Number of conflicts identified in the timetable	✓	✓
Z2 Level of SO capability with regards to its duties under the Construction and Design Management legislation	✓	✓
Z3 Operational safety impacts assessed for all early stage projects (in accordance with the Common Safety Method)	✓	✓
Z4 Completion of Disability Impact Assessments for all relevant enhancements during the development stage	✓	✓
Z5 Number of stations assessed as 'overcrowded' in any given year	✗	✓
Z6 National level crossing risk score	✗	✓

5.21. With regards to these measures, we note that:

- There is some duplication with the activities relating to the SO's role in developing enhancements and producing a timetable. This reflects the fact that a better-specified project or a more accurate timetable is also likely to be a more safe one; and
- Some of the measures are focussed around adherence with processes (e.g. measure Z3 and measure Z4) and do not assess the quality of those assessments.

Chapter 5 question

Question 4: What are your views on the SO management performance measures outlined, and are there any additional measures which you think would measure and incentivise the SO's performance in these areas? We would particularly welcome suggestions on the SO's role in contributing to system safety.

6. Early thinking on possible ORR-determined SO measures

- 6.1. In order to make full use of the SO scorecards in CP6, we may require the SO to report on particular measures, which we refer to as ORR-determined SO measures. This is the focus of this chapter. We set out more information about the role of scorecards in CP6 in the Overall Framework for PR18 consultation document.
- 6.2. In principle, ORR-determined SO measures could:
- Be included in the SO scorecard; or
 - Be included in other reporting tools that the SO makes use of in CP6, as discussed in chapter 1.
- 6.3. This reflects the fact that other tools besides the SO scorecard is likely to be important in enabling the SO to report on its performance. This is because it is not always easy or appropriate to set quantifiable measures for the SO.

Identifying measures

- 6.4. In general, we might expect the SO's customers to have interests that are broadly in line with those of current and future passengers and freight customers, and of those funding the railway. For example, when engaging with the SO on the scorecard, train operating groups are likely to take a longer-term view of what is in their

commercial interests, as improvements to the performance of the SO are likely to yield both shorter-term and longer-term benefits across a number of different rail markets.

- 6.5. Furthermore, the relatively modest cost of the SO suggests that individual customers will be more focused on improving near-term and longer-term performance of the SO, rather than unduly prioritising cost savings that come at the expense of future delivery.
- 6.6. For these reasons, we see merit in not initially specifying any ORR-determined SO measures, and asking the SO to work with its customers to identify a suitable set of measures and a balanced SO scorecard for CP6.
- 6.7. Reflecting this, we are looking for the SO to propose a suitable SO scorecard for CP6 in its strategic plan. We expect it to set out the extent to which the scorecard measures reflect stakeholders' requirements and interests in a balanced way.
- 6.8. We propose following the high-level process set out in Figure 6.1. If this results in an appropriate, balanced scorecard for the SO, it could remove the need for any

ORR-determined SO measures for CP6. In particular, we will:

- Review and assess the SO measures in the strategic plan (as well as the draft SO scorecard and other reporting tools), reflecting on the criteria we have outlined below;
- Take into consideration the rationale for selection of measures and why this constitutes a balanced approach to SO reporting; and
- Ensure that the scorecard is balanced in how it reflects the interests of stakeholders.

6.9. We expect the SO to demonstrate that it has consulted with its stakeholders, and to evidence this in its SO strategic plan.

Figure 6.1: Process for determining ORR-led SO measures



6.10. We will review the SO strategic plan and the measures it intends to report on over CP6 (including in its SO scorecard) and determine whether there is merit in us

setting any ORR-led SO measures as part of the final determination.

6.11. As part of our assessment of the strategic plan, we will review the SO's rationale and identify if we consider that anything is missing. In particular, we will consider how the proposed measures (including those in the draft SO scorecard) satisfy stakeholder requirements (notwithstanding the limitation that it will not be possible to satisfy all stakeholders' wants and needs).

6.12. SO measures and targets agreed between the SO and stakeholders could reduce the need for ORR to set measures in this area.

Criteria for identifying possible SO measures

6.13. Figure 6.2 sets out our criteria for when we would be most likely to set ORR-led measures for the SO:

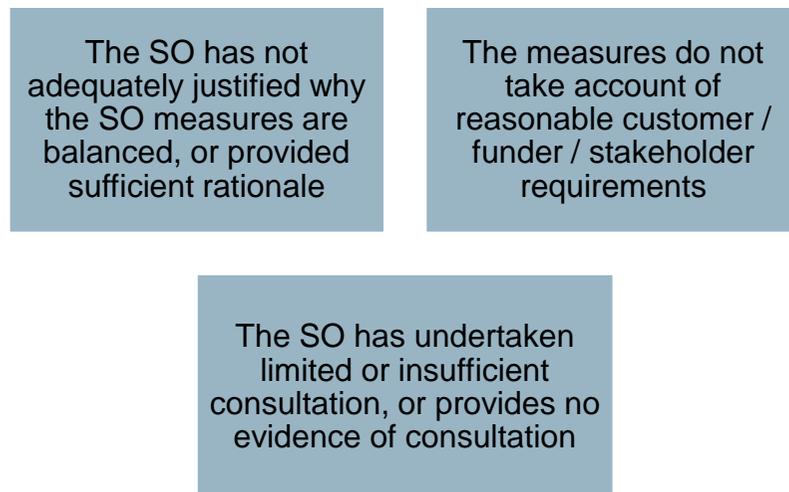
6.14. In identifying such measures, areas we would consider include:

- Measures which protect wider and/or longer-term system operation outcomes;
- Measures which might enable comparison between the SO and the rest of Network Rail, and/or

comparison of the SO's performance relative to its past/future performance;

- Measures which provide a mechanism to reflect the expectations of the SO's stakeholders; and
- Measures which protect the interests of future users of the railway (as well as current users), if they do not seem to be adequately protected (including any sub-group of users who might otherwise be underrepresented in the SO's interests).

Figure 6.2: Criteria for identifying ORR-led SO measures



- 6.15. If we choose to require the SO to report on any given measure, we will provide a clear justification in our determination to support our decision.

Treatment of the any ORR-determined SO measures

- 6.16. In line with our wider approach to ORR-determined measures and where applicable, we will provide a clear justification for any such SO measures.
- 6.17. We may also seek to set a forecast performance level, together with a range within which performance is more likely to be viewed as acceptable. We would monitor these measures and targets in the round, and would look more closely (as we do now) if a stakeholder raises a concern or if performance is outside of a certain tolerance level.
- 6.18. We discuss the process to manage potential changes to the SO scorecard over CP6 in our Overall Framework for PR18 consultation document. Our expectations for managing disputes between the SO and stakeholders would be in line with the process set out in the Overall Framework for PR18 document.

Chapter 6 questions

- Question 5: What are your views on our proposed criteria for identifying possible ORR-determined SO measures?**
- Question 6: What are your initial views on what measures, if any, ORR should consider setting as ORR-determined measures?**

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