Route Utilisation Strategies

Technical Guide

Contents

1. Introduction

1.1 Purpose of guide

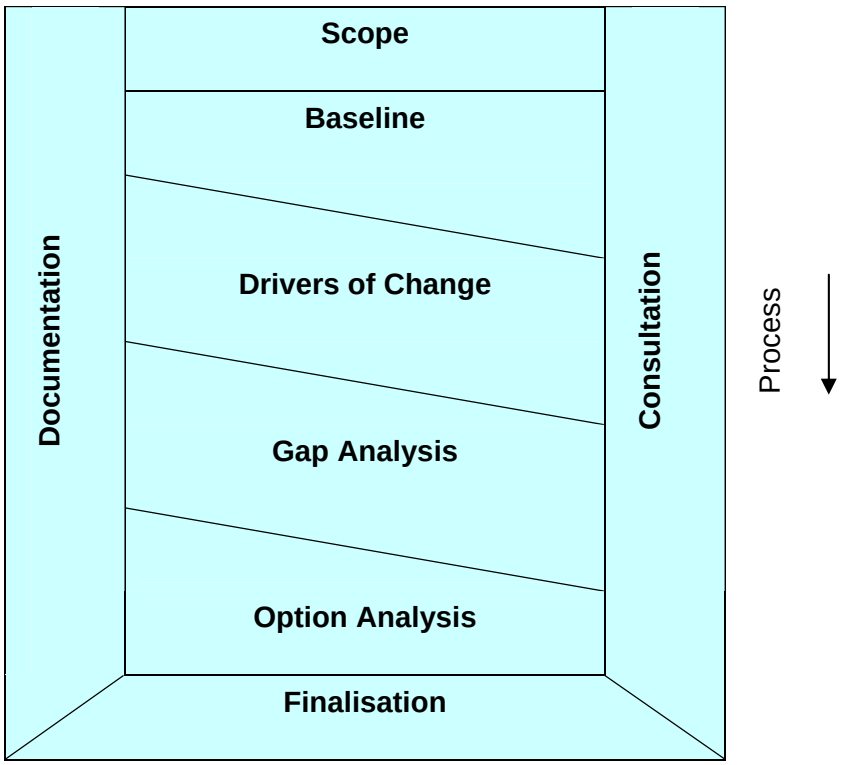
This technical guide is published so that parties who are stakeholders in the rail industry can see clearly what the Route Utilisation Strategy (RUS) process is, and what information is expected of them.

A “Stakeholder guide to the consultation process” has already been issued to many stakeholders and can be downloaded from the Network Rail website at www.networkrail.co.uk.

This document updates that published in October 2005. The RUS process is now well established with 12 RUSs established, and a further 7 RUSs at an advanced stage of work. In addition, work is now at early stage to identify when and where “maintenance” might be required, to update recommendations where assumptions or policy may have changed. This technical guide therefore also sets out how the maintenance / update of RUSs will be undertaken.

The following diagram shows how this technical guide is structured; it is important when reading one section to understand that another activity may take place concurrently.

Figure 1.1 RUS technical guide – activity breakdown



1.2 Context and purpose of RUSs

The Office of Rail Regulation (ORR) modified Network Rail's network licence in April 2009 to require the establishment and maintenance of RUSs across the network. Simultaneously, the ORR published updated guidelines on RUSs. Both are variously quoted in this guide and available in full on the ORR website at http://www.rail-reg.gov.uk.

The ORR guidelines on Route Utilisation Strategies set out the overall objective and purpose of RUSs as:

Overall objective and purpose of RUSs

The purpose of a RUS is to promote the route utilisation objective which is defined in condition 1[1] of the network licence. An established RUS allows Network Rail, train operators, suppliers, funders and other stakeholders to plan their businesses with greater clarity and certainty.

[1] The definition of network in Condition 1 of Network Rail's licence includes, where the licence holder has any estate or interest in, or right over a station or light maintenance depot, such station of light maintenance depot.

Condition 3 of ORR guidelines on Route Utilisation Strategies, April 2009

The ORR guidelines on Route Utilisation Strategies set out the key facets that each RUS should address as:

Scope

A RUS should address:

- network capacity and railway service performance;
- train and station capacity including crowding issues;
- the trade-offs between different uses of the network (e.g. between different types of passenger and freight services);
- rolling stock issues including deployment, train capacity and capability, depot and stabling facilities:
- how maintenance and renewals work can be carried out while minimising disruption to the network:
- opportunities from using new technology; and
- opportunities to improve safety.

Condition 3 of ORR guidelines on Route Utilisation Strategies, April 2009

The ORR guidelines also set out the principles by which RUSs should be developed and maintained which include:

- the time period the RUS should cover;
- out how in developing a RUS, Network Rail should take account of statements published by funders on available funding, key outputs being sought, and options they would like to see tested;

- the assumptions being made with regard to demand forecasts, commitments in Network Rail's Delivery Plan, contractual commitments, and the criteria used to appraise recommendations;

- the governance arrangements and required process as contained within this RUS Technical Guide;

- the requirements insofar as proposing, developing and maintaining an approved programme of RUSs;

- the requirements (both process and legal) for establishing RUSs;

- the process by which ORR may object to a RUS becoming established should ORR consider that a RUS does not:

    - fulfil the requirements of condition 1 of the network licence or the ORR guidelines; and,

    - adequately promote the route utilisation objective.

- the requirements for maintaining RUS recommendations and identifying where updates may be required;

- how the RUS process may be adapted as RUS evolve as contained within this RUS Technical Guide;

- how recommendations within RUSs should be maintained.

2. Process

2.1 Background and evolution

The current programme of 19 RUSs is now well advanced. With a significant number of RUSs now established the licence condition has been revised to reflect the requirement for Network Rail to maintain the recommendations contained within RUSs once they are established.

While the key governance processes established for the development of RUSs detailed in this document has not changed significantly, the revised ORR guidelines issued in April 2009 reflect the need to review, update and amend recommendations in RUSs already established where assumptions or policy may have changed. This will be done by applying three principles:

1. Keep the outputs relevant and useful in a rapidly changing environment;
2. Make the activity more efficient using experience from established RUSs; and
3. Implement lessons learnt about RUS cross-boundary issues.

The approach that is being adopted will be to:

1. Check relevance (and implementation) of recommendations from established RUSs.

2. Establish the dominant planning drivers of this next phase of work, notably the High Level Output Specification (HLOS) 2012 for England and Wales and for Scotland; and a number of franchise competitions which are due to take place until around 2015).

3. Prioritise the activity to meet the investment and specification decisions to be made by funders that will require industry strategies to be in place for all parts of the network covering the next ten years, consisting of:

    - An understanding of how the railway system will change between now and 2014;
    - Rigorous analysis leading to agreed proposals for Control Period 5 (2014-2019); and
    - Context for a decade or more beyond 2019, to understand the robustness of Control Period 5 (CP5) recommendations in different scenarios.

Where processes are tailored to meet these changed requirements they are set out under sub-headings, “Second-generation RUSs” below.

To distinguish between the current programme of 19 RUSs, and the subsequent ongoing maintenance activity of these RUSs the following nomenclature has been used throughout this document. The current programme of 19 RUSs are described as First – generation RUSs, the maintenance activity required to keep them fit for purpose as Second-generation RUSs.

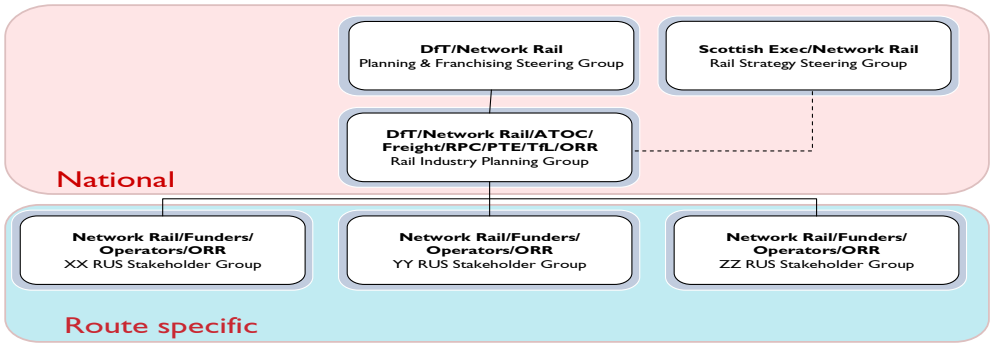
2.2 Governance

Network Rail's network licence requires it to develop and apply a set of criteria by which it will discharge its duty to ensure that the network is operated, maintained, renewed, replaced, improved, enhanced and developed. High-level criteria, the Business Planning Criteria, have been drafted and a consultation document was published in April 2005. This RUS technical guide is one of a group of procedural documents – others include Network Rail's investment regulations and asset policies – which sit below the Business Planning Criteria and represent its application in different practical areas.

The licence and RUS guidelines make it clear that Network Rail is accountable for the development, establishment and maintenance of RUSs on behalf of the rail industry. This is achieved through a structured consultative process for each individual RUS, as explained in section 9, and through formal and informal processes at an industry-wide level.

The formal industry-wide process is a quarterly forum called Rail Industry Planning Group (RIPG) which is chaired by Network Rail and comprises representatives from Department for Transport (DfT), devolved administrations, Transport for London (TfL), Passenger Transport Executives (PTEs), passenger and freight train operators and Passenger Focus and freight users. This can discuss and inform the development of the RUS programme and processes. Informal discussions are held on a regular or ad hoc basis with each of these groups.

Figure 2.1 RUS Industry Governance



2.3 Individual RUS Governance

2.3.1 First-generation RUSs

For individual RUSs, the accountability for producing the RUS and maintenance of the recommendations thereafter resides with the appropriate Principal Network Planner within the Planning & Regulation organisation within Network Rail (Network Planning Manager for the Freight RUS and Network RUS).

While Network Rail takes the responsibility to lead and produce the agreed programme of RUSs, the approach to production of each RUS is very much a collaborative approach involving all key rail industry players together with key wider stakeholders such as specifiers and / or funders.

According to Network Rail's Licence Condition No.1:

Route Utilisation Strategies

1.14 In complying with condition 1.4 the licence holder shall establish and maintain route utilisation strategies to promote the route utilisation objective in accordance with guidelines issued by ORR under condition 1.8.

1.15 The licence holder shall have due regard to the route utilisation strategies when carrying out its licensed activities.

1.16 Each route utilisation strategy shall be established:

(a) by such dates as are specified in a programme or programmes proposed by the licence holder and approved by ORR or any amendment to such dates which is approved by ORR;

(b) in accordance with:

(i) the policies and criteria referred to in condition 1.19(a); and

(ii) guidelines issued by ORR under condition 1.8.

1.17 The licence holder shall from time to time and when so directed by ORR review and, if necessary, amend each route utilisation strategy to ensure that it:

(a) continues to promote the route utilisation objective; and

(b) remains in accordance with the policies and criteria referred to in condition 1.19(a).

The provisions of condition 1.16 in relation to the establishment of a route utilisation strategy shall apply equally to the amendment of a route utilisation strategy under this condition 1.17.

In order to deliver this obligation in an effective and consistent manner throughout the RUS process, two consultative groups have been established for each route-based RUS. Slightly different arrangements have been developed for the Freight RUS and Network RUS which both have effectively national coverage.

Stakeholder Management Group (SMG)

The SMG typically consists of representatives from the following organisations:

- Network Rail
- Train Operating Companies (TOCs) , Lead TOC or Owning Group
- Association of Train Operators (ATOC) (representing non-lead TOCs)
- Freight Operating Companies (FOC)s
- DfT (and / or Transport Scotland in Scotland)
- TfL or PTE(s) or Welsh Assembly Government (WAG) or Scottish Executive (as appropriate)

- Passenger Focus (London Travelwatch in London)
- ORR (as observer)

This forum will meet at key points during the development of each individual RUS, typically 6-8 times during the RUS process (see Figure 2.3 below). The SMG should formally agree:

- Scope
- Baseline
- Gaps
- Options
- Draft RUS content
- Final RUS content.

In principle the SMG acts as the industry steering group for production of each RUS.

Wider Stakeholder Group (WSG)

The WSG typically consists of representatives from the following organisations:

- Network Rail
- Passenger Focus (and London Travel Watch if appropriate)
- Rail Freight Group
- Members of Parliament
- Government Regional Offices
- Regional Assemblies
- Regional Development Agencies
- Local Government
- Railway Partnerships
- Rail User Groups

The purpose of WSG is to ensure that stakeholders beyond the rail industry have the opportunity to contribute to the process and are briefed and prepared to make best use of the formal consultation period. This forum may be split into several groups meeting in different locations, if required by the geographical spread of the RUS. It meets less frequently than the SMG, typically 4-5 times during the RUS process (see Figure 2.3 below).

Briefings are also provided as the need arises to other influential groups, e.g. CBI, chambers of commerce.

2.3.2 Second-generation RUSs

Where RUSs are renewed or updated, the principles of Stakeholder engagement and their role in governance of individual RUSs as outlined above remain valid. The approach though will be through a more flexible structure than the rigid hierarchy used to date to recognise that, increasingly, regional authorities are potential funders of railway services; and some issues would involve so many industry parties that a conventional SMG would become unmanageable. Stakeholder management arrangements will therefore follow the established hierarchical model but will become bespoke for each second-generation RUS with the arrangements to apply made explicit in the scope document of each RUS before work is started.

It should be noted that established RUS recommendations will not be re-considered unless assumptions or policy has changed.

2.4 Project management

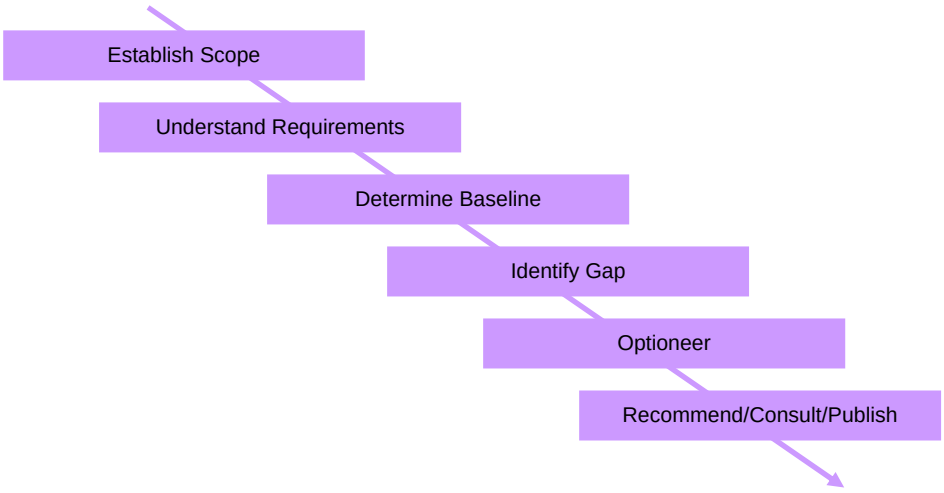
The activity within Network Rail for each RUS is managed at two levels: a frequent informal review session, and formal 'gate' reviews at key points in the process similar to those used in Network Rail's investment management processes. There are also reviews of all current and planned RUS activity with key internal departments such as those specialising in demand forecasting or timetable analysis.

In addition, the Network Rail RUS Programme Manager is responsible for the overall national RUS programme co-ordination and integration, identifying areas of risk and uncertainty and proposing mitigation where appropriate.

2.5 Process overview

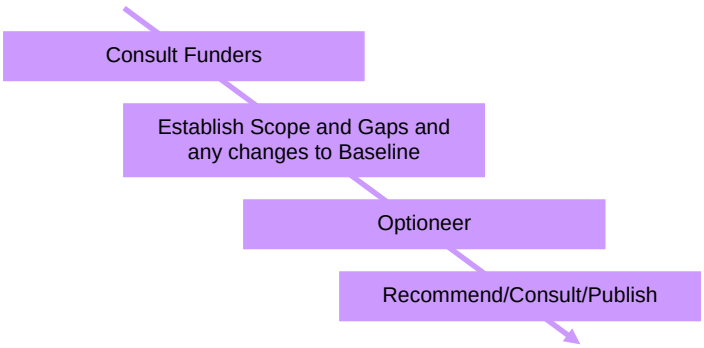
The process for developing, publishing and establishing RUSs is now well established and consists of the following critical path for first-generation RUSs:

Figure 2.2 First-generation RUS high-level process



Second-generation RUSs will follow the same broad principles, although these will be streamlined as detailed in 2.3.2 and described in more detail in sections 2-10 below.

Figure 2.3 Second-generation RUS high-level process



First generation RUSs have typically taken between 18-24 months to complete from commencement to formal establishment by ORR. The precise duration needed to complete a RUS is dependant upon a number of factors such as:

- Complexity of RUS area;
- Number of gaps and options to consider;
- Specialist resources required to undertake work.

Figures 2.4 and 2.5 indicate respectively a typical first-generation RUS programme and a second-generation RUS programme

Figure 2.4 First-generation RUS Programme

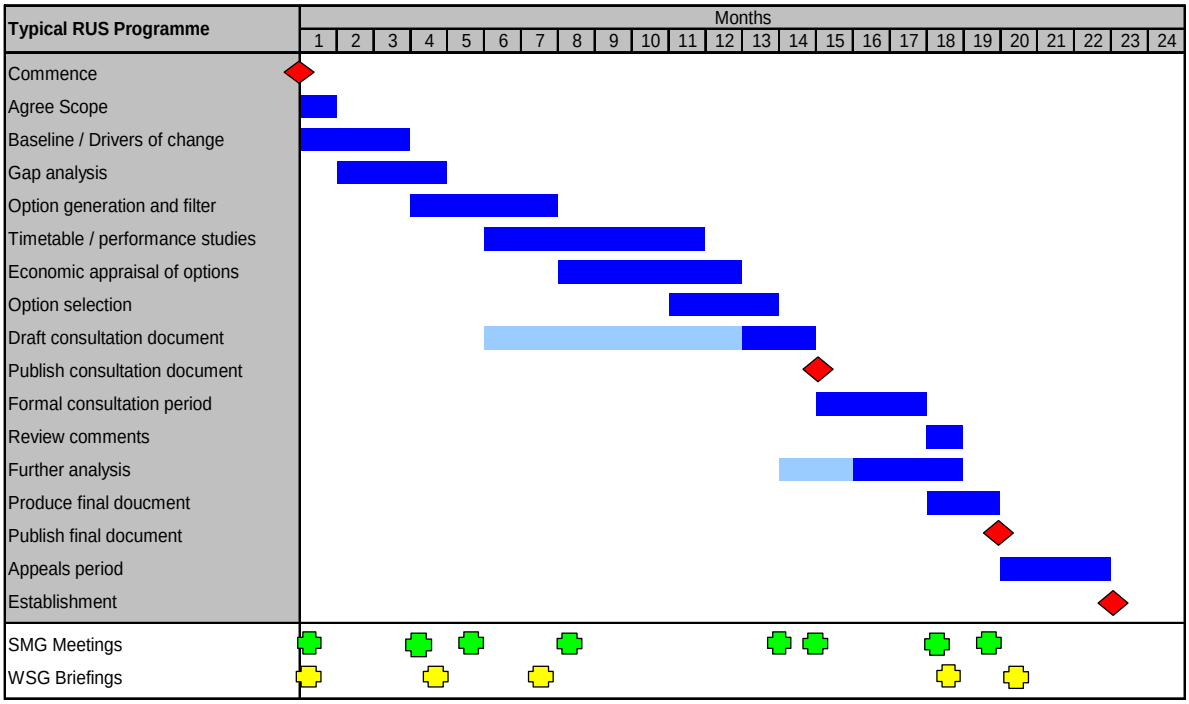
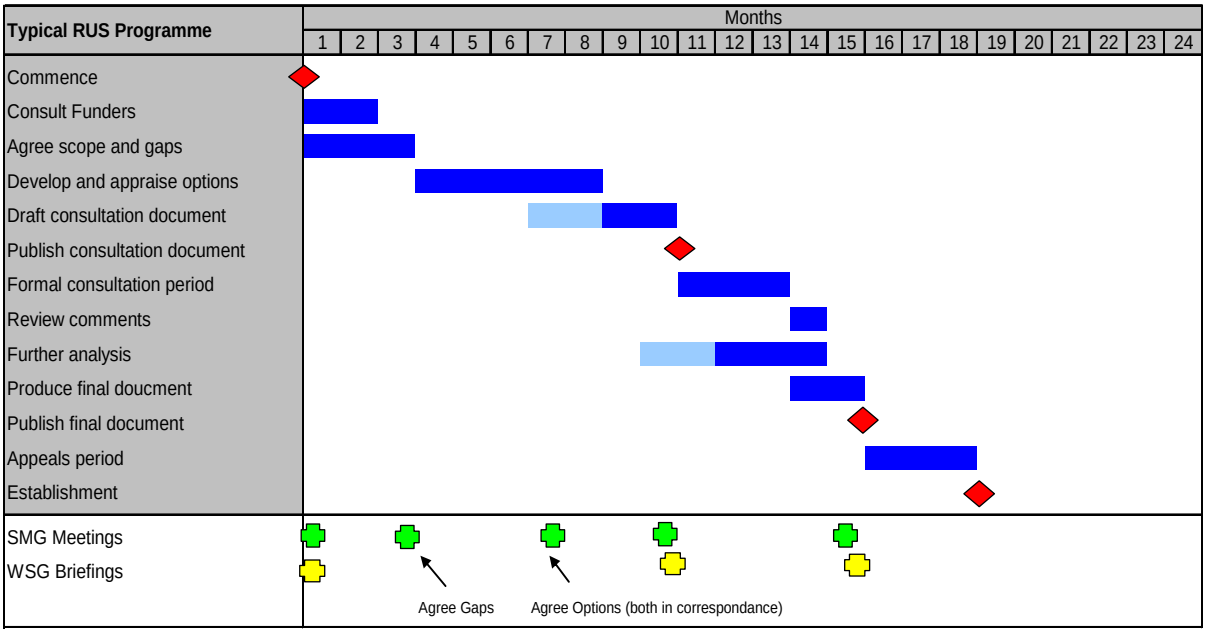


Figure 2.5 Second-generation RUS Programme



It should be noted that the second-generation RUS programme intends to adopt a more flexible approach, adopting a higher strategic level of assessment, and keeping the outputs relevant and useful, building on strategies established in the earlier first-generation RUS work. This will enable the outputs to be delivered in a timely manner, consistent with the development of Network Rails Periodic review documentation, which will inform the 2012 HLOS process.

2.6 RUS Tracker Database

The ORR guidelines on Route Utilisation Strategies sets out how Network Rail should track the development and implementation of recommendations made in RUSs.

Keeping track of RUS recommendations

32. For RUSs to play their full role in providing a basis for planning the industry, stakeholders need to know the status of RUS recommendations.

33. Therefore Network Rail should develop and maintain an electronic database with details of all RUS recommendations. Network Rail should do this in consultation with operators, funders and other relevant stakeholders.

34. The database should show what, if any, action has been taken as a result of those recommendations, and show the reasons for any delay or inaction.

35. Network Rail should publish the database on its website and update it at regular intervals.

To enable Network Rail to comply with this requirement, a database will be established that will:

- List all recommendations by RUS and Strategic Route;
- Detail the gap considered to meet the identified options;
- Detail funding stream(s) for each recommendation;
- Detail type of intervention;
- Detail key assumptions for each recommendation;
- Detail the status of each recommendation; and
- Detail the delivery date of each recommendation.

This RUS Tracker database will be published with regular updates on the Network Rail website at **www.networkrail.co.uk**.

The RUS Tracker will be also be used as a key source of information in establishing scope for second-generation RUSs. By reviewing the status of earlier recommendations, a view will be formed as to whether any of the earlier first-generation RUS recommendations require further review as a result of any assumptions that may have changed or as a result of any policy changes.

3. Scope

3.1 Programme of RUSs

Route utilisation strategies will inform the development and delivery of timetables, infrastructure maintenance and renewals for the network. They will also underpin the development of franchise specifications and will contribute to the Government's and Scottish Ministers' High Level Output Statements for the rail network.

The programme has been devised to meet as far as possible the appropriate dates for input to these other processes and to draw on Regional Planning Assessments (RPAs). The programme is not intended to be static; it will evolve and change over time. Changes, which generally will be limited to the programme elements furthest in the future, will be developed in consultation with key stakeholders and subject to approval by ORR.

A tier of second-generation RUSs will build on the established work encompassed by the first-generation RUS programme that provided coverage of the entire national rail network.

A tier of second-generation RUSs will be established to:

- Build on detailed work undertaken by a number of the early first-generation RUSs that by their timing will now need some more detailed analysis of requirements for CP5 and beyond where a 30-year planning horizon was not considered in any detail;

- Review assumptions made in a number of the first-generation RUSs which will now need review following assumptions that may have changed or where policy has changed/is still being determined;

- Consider the impact of freight demand forecasts beyond the 2014 planning horizon considered in the Freight RUS;

- Consider the future strategy for heavy rail around London, where London termini (and their approaches) are likely to be the limiting factor on capacity into and out of London within the next twenty years, and consider the impact of proposals for new lines and High Speed line 2;

- Consider the strategy for rail in the North of England building on the development of the 'Manchester Hub' proposals and the deployment of the Intercity Express Programme on the East Coast Main Line.

- Consider the strategy for rail services in Scotland by updating the established first-generation Scotland RUS taking cognisance of the Strategic Transport Projects Review published by Transport Scotland.

It has therefore been established that while second-generation RUSs will not be solely limited to a set geographical area, the work will consist of broadly three areas of activity, namely:

- London and South East;
- Northern; and,

- Scotland.

In addition, a number of cross-boundary issues emerged during development of individual first-generation RUSs. These are being prioritised and progressed separately to inform individual RUSs currently under development.

In addition, the implications of longer-term demand forecasts for long-distance passenger and freight (being published through the Network RUS) will need to be considered on the RUSs already produced. A separate activity has been started prior to the development of second-generation RUSs, to examine the requirements for long-distance passenger and freight services in the light of these forecasts.

Strategically, the timing of the completion of the first-generation RUS programme, and the additional work required to be completed by the second-generation RUS scope, will be an important factor in informing recommendations for the 2012 HLOS, which will for the first time start to consider inter-modal opportunities and prioritisation.

The latest programme is available at **www.networkrail.co.uk**.

3.2 Defining Scope

Typically, first-generation RUSs have developed a scope to address:

- Geographic coverage - which railway route sections are included;
- Which services are considered - in general a RUS will assess services or service groups that traverse the RUS area to and from other RUS areas, as these will have a significant impact on capacity;
- Timescale - usually a detailed view on requirements to meet the identified demand for the next 10 years but as required to fit known dates for key changes such as a franchise change or a major project, with a considered strategic view on possible interventions required during the next 30 years.

As detailed in 3.1 above, second-generation RUS scope will build on the strategies established in the first-generation RUSs and will only consider further work where earlier assumptions and policy has significantly changed. By nature this work will generally be undertaken at a higher strategic level of analysis than that undertaken in the first-generation RUSs in order to meet the planning timescales for 2012 HLOS.

As detailed in 2.3.2 above, it is important to note that second generation RUSs will **not** look to re-open established RUS recommendations except where there has been a significant change in circumstance or policy. As such the second generation RUS programme will develop a list of gaps with Stakeholders which will be formulated within the scope of the RUS, and which will be formally agreed at the first SMG for that particular RUS.

4. Baseline

4.1 Supply – infrastructure

At the simplest level, it is necessary first to understand what infrastructure is physically present on the route, then its properties with respect to capability and capacity.

Capability includes measures such as:

- loading gauge
- route availability
- length limits (which may be constrained by a number of factors, most commonly platform lengths for passenger trains and loop lengths for freight trains).

Capability data is readily available within Network Rail and much of it has been published. It should be collated to identify particular constraints within the RUS area.

When considering capacity, great care should be taken in how this is expressed as the theoretical capacity will depend on a number of factors such as the relative speeds of trains, their performance characteristics, stopping patterns of services, and how any particular route is signalled. Therefore the temptation to express a planning headway of 5 minutes as equivalent to 12 trains per hour should be resisted.

4.2 Supply – trains

The train service should be measured in two broad respects:

- its relationship to the infrastructure
- its outputs to users.

4.2.1 Use of capacity

One way to consider the amount of infrastructure capacity used by a timetable is in terms of the Capacity Utilisation Index (CUI). This provides a simple description of the heavily used route sections. However, the CUI gives only a broad indication of congestion on plain line route sections and is sensitive to the methodologies used to calculate the Index. It is not effective for assessing the capacity of key junctions and other bottlenecks or nodes.

An alternative is to use the Railsys model to calculate the proportion of available capacity used by the current timetable. Railsys is the standard tool used within the rail industry for undertaking this type of analysis in addition to performance and timetable modelling analysis.

4.2.2 Train service outputs

Passenger service outputs can be expressed as:

- Train frequency } Clearly these are related
- Stopping pattern
- Through journey opportunities and those provided by connections
- Journey times
- Capacity

These indicators could be applied to any flow from an origin station to a destination station, and when the opportunities to use alternative stations for the same journey are added it can be seen why passenger demand requires sophisticated modelling. In practice at the baseline stage it is most useful to consider the timetable 'offer' only for key traffic generators and flows. As analysis progresses, these factors should be considered whenever a gap is thought to exist between supply and demand.

The capacity provided by a timetable is of course the aggregate capacity of the trains in the timetable (at whatever point is being analysed, e.g. all trains arriving at Waterloo in the morning peak). However, the capacity of a train can be expressed in a variety of ways. The simplest is the number of seats, but this does not reflect the fact that some rolling stock designed for short journeys in busy areas has fewer seats and more standing space. There is a DfT measure applicable to south-east TOCs called passengers in excess of capacity (PIXC), which defines the capacity of a train in terms of the seats plus a number of standing passengers per unit of floor space. TfL has a variant of this in use on the Underground, which unsurprisingly allows a higher standing density.

Freight services are more likely only to run when there is traffic for the train, so the baselining of supply and demand are much closer – this is dealt with in section 4.4. However, other supply outputs from the timetable such as journey time may need to be considered.

4.3 Demand – passenger

4.3.1 Data sources

Understanding passenger demand is a key element of the baseline analysis for any RUS. The output of this analysis will be the issues and the opportunities to change train services to improve the match between train services and current demand. This understanding also provides the base for forecasting future demand. A RUS will not be covering a completely homogeneous set of services and hence it is necessary to define segments of route and groups of services with similar characteristics in order to simplify the analysis.

The exercise should explore all areas relevant to demand. Timetable characteristics such as frequency and journey time are discussed in section 4.2, but other factors include:

- Fares
- Car parking – capacity and charges (if any)
- Any particularly significant trip generators

As far as is practical, the data should be divided by day of the week, season and time of day (at least peak/off-peak). Historical data should be gathered for comparison. In each case the data should be specified in sufficient detail to define and quantify each problem. Where practical, data should be collected in a common form for all RUSs.

Data should be collated from the various sources and then presented in a form that helps understanding of issues and opportunities and hence supports gap analysis and option development. It is likely that a 'second pass' will be required in some areas, as additional information is required to answer questions.

For most RUSs, data will come from:

- LENNON ticket sales data (but this gives no indication of numbers on particular trains)
- LATS / NRTS survey and count data (currently only available for south-east England, but the NRTS is gradually being rolled out nationally)
- MOIRA and PLANET models – where validation is adequate
- Local TOC, station and PTE passenger counts
- Some operators (e.g. Thameslink) have trains fitted with automatic train weighing systems or other devices to 'count' passengers
- PIXC counts for south-east TOCs

Care should be taken with regard to data quality which can be affected by a number of factors such as:

- PTE and area Travelcard sales that are not recorded through the principle ticketing systems
- Impact of engineering work on demand for services
- Seasonal variations

Where data does not exist, consideration should be given as to the most effective way of collecting data, and this should be undertaken in conjunction with key Stakeholders (e.g., TOCs, FOCs, ATOC) in order that sensible assumptions can be made in order that the results derived are valid and sensible conclusions can be drawn from them.

4.3.2 Useful indicators

Passenger baseline demand data is typically analysed in three categories; flows, stations and trains. These should be considered for use in each RUS, utilising the following indicators:

4.3.2.1 Flows

Geographical ('GIS') tools are particularly useful in mapping data to help to understand:

- Movements across rail nodes: in certain situations, through services across stations with capacity constraints may either limit or enhance capacity – it is important to understand the extent to which passengers currently benefit from, or would benefit from, direct through services. Count data will reveal the extent to which through journeys are made and MOIRA results could indicate possible changes that would create benefits. This type of analysis may also be relevant for stopping patterns of longer distance services
- Long-distance *vs* short-distance: in many cases, long distance services primarily carry short distance flows. Understanding the balance of long-distance and short-distance traffic on sections of route can help in allocating capacity appropriately
- Volumes of usage along routes, where different sections of each line deserve differing levels of service, notwithstanding infrastructure constraints
- Top 20 flows (and how these have varied over time)
- Comparative analysis of data (between regions or service types)
- Fares (comparison between routes; does the fares profile along a route encourage railheading)
- Market segments, by class, ticket types, journey purpose
- Small flows that are significant to stakeholders
- Peculiarities – e.g. school and holiday/seasonal flows.

4.3.2.2. Stations

RUSs should identify where stops at lightly used stations use up valuable track capacity; or alternatively, where more services should stop to relieve crowding on other services and improve performance. Useful indicators include:

- Annual station usage
- Average passengers boarding / alighting per train stopping at the station (by peak / off-peak and weekday / weekend)
- Trips to / from each station (i.e. number of journeys produced and attracted by station)
- Types of trips from each station (e.g. key destinations and origins, balance of long and short distance journeys)
- Car park utilisation (this often caps commuting and off-peak demand)
- Split of station users by mode of access to station
- Station catchment areas
- Interchange volumes and issues

4.3.2.3 Trains

Useful indicators include:

- Passengers / trains: calculated for each station-station segment, to understand whether train lengths or frequencies are appropriate on the route
- Passengers / vehicle: seating capacity of trains varies significantly from route to route, and overcrowding can be caused by inappropriate rolling stock
- Passengers / seats: calculated for each station-station route segment, to understand whether the total seats provided on the route is appropriate. This should also be broken down by TOC/ service group to understand whether some service groups are more crowded than others
- Passenger km versus vehicle and train km.

4.4 Demand – freight

The purpose of freight baselining is to outline the current usage of the network by freight services. The RUS should therefore provide a picture of typical daily freight flows on each main route section, the nature of these flows and their volatility by each main commodity type.

The analysis of rail freight utilisation differs from that of passenger services because freight trains usually only run when there is sufficient traffic, whereas a passenger train runs as scheduled even if there are no passengers for it. This means that the capability of the network and the availability of capacity are of great importance to freight operators. This includes capacity necessary to meet new or changed customer needs, which is usually allowed for within their track access rights. A reasonable availability of capacity (i.e. extra paths) over and above the core day-to-day need is important to freight – as important as spare capacity on passenger trains – to allow for growth and fluctuations in demand.

With these considerations in mind, freight baselining should include the following:

- Understanding the needs underlying current service patterns, planned and actual path usage
- Determining the average and maximum path requirement
- Understanding the variations in the paths over times of week and year to determine whether the distribution of trains is substantially different

- An understanding of route capacity and capability limitations (see section 4.1)

4.4.1 Data Sources

Two main sources are available:

- the Freight Actual and Planned database (incorporating Freight WTT)
- Network Rail's tonnage based 'Polkadot' system.

The Actual and Planned Database can provide:

- Planned and actual freight usage data for 160 selected key nodes on the network
- 13-way commodity split on all train data. Base data also covers gross/ net tonnage, operator, time of day and train length. Commodity sectors match with the market studies undertaken by the SRA
- Summary functions for ordering base data into useful management information

Most recently, Network Rail developed the 'Polkadot' system which records annual gross tonnage by commodity over the entire network, divided into 1700 constituent parts. Although not appropriate for assessing capacity demands from freight, the database is a useful tool in high-level baselining as well as understanding tonnage demands on the network.

Because the database captures network-wide data by financial year, it can be used to check Network Rail's baseline freight usage against operators' annual 'tonnes lifted' figures, although an appropriate multiplier between gross and net tonnage by commodity is required.

4.4.2 Strategic Freight Network (SFN)

This recent work stream has assessed on a national basis the key requirements for the routing of long distance freight flows. It is important that individual RUSs assess the key outputs stated within the SFN which include:

- Decisions with regard to long distance freight routing; and,
- Freight growth forecasts when converted to volumetric requirements for train length and number of trains.

4.5 Engineering access

Current engineering access (EA) arrangements should be researched and described in a simple graphic form. This should focus on recurring patterns of access for maintenance and minor renewals rather than one-off major renewal items which would be unrepresentative.

In RUSs so far, examination of EA arrangements has tended to be qualitative and case-specific. Network Rail intends to develop measures, in consultation with users of the network, that allow comparison of engineering access volume against outputs from route to route. These could for example comprise standard indices of network availability by time and of infrastructure component reliability.

4.6 Performance

RUSs should identify, wherever possible graphically:

- Current performance on the route
- An overview of causes and trends

- Location and causes of reactionary delay
- Any exogenous factors that are likely to ameliorate or exacerbate performance problems over the RUS period

The railway industry is engaged in numerous initiatives to tackle all causes of delay. In general RUSs are concerned to ensure efficient utilisation. They therefore need to examine performance from the point of view of identifying any over-used route sections, where the delay caused by the original incident is magnified by reactionary delay – the knock-on effects on following trains.

Generally primary delay will not be considered in detail within RUSs, this generally being assessed as part of the day to day role of Route Planning and Performance and Operational teams within the rail industry. However it will set the context and is therefore necessarily relevant in considering the broader terms of overall delay. In particular, relevant performance output measures should be considered including the historical trend:

- PPM and Passenger's Charter statistics for franchised operators
- Delay minutes for open access operators whether passenger or freight

In each case, if these headline measures can be disaggregated to the service group(s) most relevant to the scope of the RUS then this should be done.

All information on current delay is ultimately sourced by the TRUST database. TRUST provides data for each recording point on the network. The data is recorded daily, and can be disaggregated into:

- Recording point and direction
- Primary/reactionary
- Passenger/freight
- Time of day
- Cause

5. Drivers of Change

5.1 Supply: committed infrastructure schemes

Proposed changes in infrastructure must be clearly divided between:

- Committed changes, which will be included in the 'do-minimum' base case for later analysis; and
- Uncommitted changes, on which a judgement should be taken whether to exclude completely, include as a sensitivity test on other analyses, or include through the definition of one or more specific options.

5.2 Supply: committed service changes

Proposed timetable changes may be associated with infrastructure projects, or resulting from another initiative such as the introduction of new rolling stock or a franchise commitment or re-specification. In either case they should be dealt with in the same way as infrastructure changes and divided between committed changes that are included in the 'do minimum' case, and uncommitted changes that may or may not be appropriate to include within the RUS analysis.

5.3 Demand: passenger forecasting

5.3.1 Forecasting overview

Demand forecasting in the context of a RUS has two purposes:

- firstly as an input to the gap analysis stage of the RUS development process, by predicting future problems and issues that will arise in the 'do minimum' scenario
- secondly as part of the appraisal of the net benefit of different options.

This section focuses on the first of these, for passenger demand. The second is covered in section 7.

It is important to establish what the likely base case is for the rail network and usage in future years, against which options for intervention can be tested. The definition of the base case (or 'do minimum') consists of central views of how demand and services will change in size and nature over the lifespan of the RUS. The exact definition of the base case should be discussed at an early stage with the demand forecasting experts.

For the purposes of the RUS, drivers of change for passenger demand fall into two main categories:

- Background changes to passenger demand growth, caused by economic development and changes in demographics such as population, employment and car ownership; and
- Effects of transport schemes and policies, such as changes to rail services, new stations, major highway schemes or road user charging policies that are likely to change the rail market.

5.3.2 Background passenger demand growth

The following four growth scenarios should be considered:

- The assumptions contained in the Rail Industry Forecasting Framework (RIFF). This is the standard industry approach for future year passenger demand forecasting. This growth scenario is likely to be used as the central case for appraisal work.
- Trend. For each segment, take the last 5 / 10 years actual growth and extrapolate forward for the same period. Exclude the effect of major upgrades / disruptions and fare changes. Assume RPI+1% fare inflation going forward on all fares unless specific guidance is given (although other fare scenarios could be considered as tests).
- Performance Improvement.
- Stakeholder transport policies and proposals.

5.3.3. Effect of other transport schemes

The RUSs must be disciplined in assessing the status of other transport schemes (both rail and competing mode). Only those schemes that are committed and funded should be included in the central case for forecasting. Any other schemes or aspirations should be treated as sensitivity tests. Rail service changes should be included provided they exist in other agreed strategies or franchise commitments. More subtle transport schemes, such as restrictions on car parking in city centres in future developments, should be included if they are explicitly stated within agreed local planning documents.

Any other uncommitted service changes should be considered alongside other RUS options. A RUS may well highlight the fact that there is a more efficient way of achieving the objectives of the service changes at much reduced cost and improved performance.

Where crowding is a significant issue, unconstrained growth figures should be produced as well as constrained growth.

5.3.4. Forecasting crowding

It is rarely easy to forecast the effects of growing demand on train crowding in the 'do minimum' and other service change or capacity enhancement options. Modelling has its limitations. The PLANET peak models can be used in some circumstances where there is a reasonably homogeneous pattern of patronage in peak periods. But even here PLANET will find difficulty in estimating the effects within each hour of options that change the capacity only in certain hours within the peak period.

For crowding that occurs on specific trains or on specific days per week, it is first important to understand the reasons for the crowding. These may include Saver fares policies, weekend commuting, lack of capacity in earlier or later trains etc. Having understood the dynamic that is causing the crowding, it is often most appropriate to use a spreadsheet approach and Network Rail has developed a bespoke spreadsheet model to assess the business case for options that reduce crowding. In some cases this may simply entail factoring up current patronage by forecast percentage growth, in others more sophisticated assumptions may be needed to plot abstraction from previous or following services. In each case the assumptions used should be explicit and, so far as possible, should reflect the individual circumstances of the case.

5.3.5 Some further points

The lifespan of the RUS will be defined by agreement, but is likely to consider a planning horizon of 5 -10 years in detail and then a more holistic view out to a 30-year planning horizon. There are a number of factors that could affect passenger growth over the period. For the initial stages of the RUS, the primary focus should consider the development of strategies that are robust under a range of different growth scenarios.

In addition it is essential that:

- The analysis must follow the Treasury/DfT guidelines
- Economic benefits need to be considered, not just revenue
- A stakeholder review is essential in advance of option development and appraisal (see section 9.1).

5.3.6 Tools

Passenger demand forecasting tools are a vital component of understanding demand patterns as well as testing options. A number of models are available for use as follows:

5.3.6.1 PLANET (Strategic and North/South)

This is a DfT-owned suite of strategic demand forecasting models, comprising a.m. and inter-peak models for the South (PSAM/PSIP) and the North (PNAM/PNIP) of England, and an all-day strategic model (PSM) for longer distance movements across the UK. PLANET models:

- Are frequency based and capture the levels and patterns of passenger services across the Network Rail
- Include Travelcard movements within Greater London, as well as demand associated with LUL and DLR lines.
- Are a full mode-choice model, including information on competing air and highway modes, providing a more detailed view of the competitive position of rail.
- Do not model internal services in Scotland.

PLANET is recommended for use at the option development phase of a RUS. The models give high-level answers which are less dependent on individual timetables, allowing more effective option sifting.

5.3.6.2 MOIRA

MOIRA is a forecasting tool owned by ATOC. It models distribution of passengers amongst individual train services using ORCATS allocation mechanisms. However, it does not take into account either crowding or detailed PTE ticket sales, making its usefulness limited in PTE areas or where severe overcrowding exists.

Although MOIRA can be used as a quick check on total passenger numbers on individual routes, care should be taken on interpreting individual train loading numbers – ORCATS assumes demand profiles from annual ticket sales, but often

provides a poor estimate of weekend or late evening usage. Also, the identification of ticket type to journey purpose is, arguably, becoming inaccurate. Other problem areas are airport services, London Travelcards and highly seasonal flows (e.g. to seaside resorts). However, the model is reasonable for use on inter-peak services outside PTE areas, and can be used to test detailed timetable options.

ATOC is currently developing a replacement for MOIRA and it is anticipated that it will be available for use in 2010.

5.3.6.3 PLATO

Building on MOIRA, PLATO is a package that considers redistribution of peak hour crowding amongst individual services on particular routes. It uses a mix of survey and ticket data to establish detailed train loading profiles, and uses PDFH crowding assumptions to distribute passengers amongst train services.

Although the tool is reasonable at checking the impact of timetable changes, the economic and financial benefits are heavily dependent on the assumptions of demand profiling and the calibration of the model. Hence the model is not recommended for use in establishing business cases for either train lengthening or service enhancement – these should be tested in PLANET first to establish the economic and financial cases at a strategic level. PLATO can then be used to test the practicality of specific timetable options.

PLATO is not suitable for testing crowding on long distance services.

5.3.6.7 Other models

A number of other models can be used that:

- Consider rail in the a multi- modal context (PTE areas)
- For Scotland where there is the Scottish Executive's Transport Model for Scotland, which is a high-level multi-modal strategic model and thus most suitable for rail use where a significant change to medium- or long-distance services is proposed.

5.3.7 Checks

Before any tool is agreed for use, it should be checked for:

- Base case validation (i.e. does the model match existing passenger counts?)
- Responsiveness to changes in rail services (e.g. does lengthening trains give benefits and passenger increases plausible to rail demand forecasting experts?)
- Accuracy of coding (i.e. whether rail services are up-to-date and whether options are being incorporated into the model appropriately).

In any case, detailed option testing should be undertaken using one of the standard industry tools, to allow cross-comparison of options against other RUS areas.

Whichever tools are used, sense checks should be undertaken on model outputs. DfT requires standard Quality Assurance procedures to be followed for the PLANET models, on completion of the work.

5.3.8 Fares and crowding

The Government sets the overall rail fares policy. Under the existing regulatory framework, the DfT could use fares to manage demand by setting the level of permitted fare increases in the regulated price cap, and it could also use fares to manage crowding by determining the composition of the regulatory basket, such as whether shoulder peak fares are included in the basket.

For demand forecasting RUSs assume that regulated and unregulated fares will increase by RPI +1% p.a, unless advised otherwise by the franchising authority. This is an across the board assumption used in the 'do minimum' scenario and in the evaluation of the options for service changes. This assumption does not take account of the possiblities for selective fare increases to manage demand or fund capacity enhancements on crowded parts of the routes.

Under existing regulation, operators are permitted to change peak commuter fares within a regulated basket. Operators can then use fares to manage demand within the regulatory regime. Operators are free to price unregulated off-peak fares and can also introduce shoulder peak pricing, which can potenially be used to spread demand away from peak periods.

Fares can potentially be used to manage crowding, both by reducing demand on the most crowded trains and by raising funds for capacity expansion. Where there is excessive crowding, the fares options include:

- *higher overall fares*. The main way in which this would help with the management of crowding is by providing funds to finance capacity enhancement through hypothecation. In addition, this may have some impact on demand, although this is more likely to be a long-run rather than an immediate response.

- *differentiated fares*, with relatively higher fares where crowding is highest. Crowding could be more effectively managed if fares are relatively higher for routes and at times of day when crowding is highest, as long as passengers are aware of these differential prices. The idea is that some passengers would switch from the most crowded journeys to less crowded journeys, either at a different time or, in the longer run, potentially on a different route (if the passenger moves house or railheads to a different station).

There may be some potential for higher fares to reduce demand on the most crowded services and for yield management to spread demand to less crowded services. However, the scope to do so within the current framework of fares regulation is limited to changing fares within each TOC's regulated fares baskets, and to changing unregulated fares (set to maximise TOC income). These opportunities are likely to have already been exploited by TOCs.

In view of the limited scope for fares changes within current regulation, RUSs assume an across-the-board RPI+1% increase in their 'do minimum' case, unless advised otherwise by the franchising authority, and alternative fare options are only examined as a broad sensitivity test to give funders a context for decision-making.

5.3.9 Outputs of forecasting

Demand modelling should establish what will happen if no action is taken (other than the changes already committed: 'do minimum').

For each option being appraised, outputs of forecasting need to be produced in such a way that the following can be checked (see section 7.5):

(a) whether the option meets its objectives,
(b) what the level of economic and financial benefits of the option are, and
(c) whether the model is giving a plausible response or if there is a possibility that the option has been miscoded.

5.3.10 Outputs setting out the extent to which an option meets the objectives set

Standard outputs from passenger demand forecasting should be consistent with the outputs from demand modelling. The outputs may also need to be produced outside the RUS area – for example, reducing train lengths or frequency inside the RUS area may lead to overcrowding outside the RUS area.

5.3.11 Economic and financial benefits

For most standard rail industry models, economic and financial benefits are produced in DfT standard formats automatically. Results should be disaggregated by origin and destination areas, to understand whether an option affects particular areas unduly, or whether a small net benefit is hiding a mixture of large positive and negative benefits for different groups of travellers. This information should be presented in a GIS format where possible.

All benefits should be presented in a manner consistent with the DfT appraisal criteria, including wider economic (such as road decongestion) and non-financial (such as social inclusion) benefits.

5.4 Demand: freight forecasting

There are a number of key differences between freight demand and passenger demand:

- Unlike franchised passenger services there is no central specification of requirements
- Delivery is by private sector operators responding solely to market signals and – for certain trades and to a much lesser extent than for passenger services – Government subsidies (grants)
- Decision making is on a contract- or train-specific basis rather than a broader service specification for a route
- The only means of influencing capacity utilisation is through Access Contracts and the Network Code; there is no equivalent to the Government's Franchise Agreements with franchised passenger operators.

These factors mean that it has in the past been hard to get a consistent and consensual view of the current or future needs of the freight market, or data to inform plans for efficient use or development of the network.

Hence, and in order to obtain a single reconciled forecast using both methods, in September 2005 Network Rail received 10-year growth forecasts from the rail freight industry. These forecasts are a combination of work by the Rail Freight Group (RFG) and the Rail Freight Operators Association (RFOA). The forecasts will be used as the principal feed into the RUS process for freight demand. These forecasts are now being extrapolated forward to consider the longer term view beyond 2014 by the work undertaken in the SFN.

These forecasts were generated both from a top-down GBFM-based modelling process by the RFG and from a bottom-up analysis of present and future traffic prospects by the RFOA.

6. Gap Analysis

As part of the RUS process, rail industry and wider stakeholder groups are invited to submit issues that they believe may constitute a “RUS Gap”, which can then be assessed as part of the RUS development. To have legitimacy as a “RUS Gap” the following criteria apply:

A RUS Gap is the gap between:

- What the system can do now (supply)
    - Infrastructure
    - Train services
- What it needs to do (demand)
    - Passenger
    - Freight
    - Performance

There are typically three types of RUS gaps:

1. Where supply and demand are currently mismatched
2. Where supply and demand are predicted to be mismatched in the future; and,
3. Funders’ “key outputs” that are in scope and consistent with funds that are or are likely to be available.

Broadly, Gaps can be generically categorised as follows:

- Performance - where the performance outputs of the railway system fall short of requirements
- Journey times & Connectivity - where location-to-location journey times (passenger or freight) or services do not meet current or future needs
- Capacity - where the size, number and mix of services (passenger and/or freight) does not meet current or future needs
- Station Facilities – where these constrain use of the rail network.

The RUS should however, record and take note of other aspirational requirements that may not constitute a “RUS Gap” but which may have potential bearing on future enhancement of the network should for example funding be identified at a future date.

The second generation RUS programme will evolve the earlier RUS work undertaken to consider where the there has been a major changes in policy and/or where a 30-year planning horizon was not previously considered. As such, the majority of the more local parochial issues will have been assessed as part of the first generation RUS programme. RUS generation 2 development will identify and agree a list of Gaps as part of the scope of that RUS. This is necessary to enable timely programme input to the 2012 HLOS process for England and Wales and the 2012 HLOS process for Scotland.

7. Option Analysis

7.1 Option generation

Once a list of RUS Gaps has been identified and agreed, a set of options need to be created to test whether the identified gaps can be met.

Each gap should be considered in the light of a number of possible solution types, referred to as a "toolkit". The toolkit prompts debate with industry partners and stakeholders about what solutions might work in each situation identified as a gap, and serves to prevent the RUS being driven by "solutions in search of a problem". The current toolkit, which like other elements of the RUS process can be expected to evolve over time, considers changes to:

- Length of trains
- Mix of services
- Passenger train stopping patterns
- Quantity of trains on particular route sections
- Quantity of trains calling at particular stations
- Station, depot and freight terminal locations
- Routeing of longer-distance trains
- Deployment of rolling stock
- Internal design of passenger rolling stock
- Demand management arrangements
- Engineering access arrangements
- Infrastructure (track, signalling, stations).

7.2 Option development

Preliminary evaluation is required to assess and rule out inappropriate options at a high/generic level – options need to pass a minimum threshold needs to move on to a full appraisal. Therefore the following should be considered:

- Technical viability
- Operational feasibility
- Performance viability
- Realistic chance of generating a positive business case – this may need to consider recommendations assessed in other RUSs, where services cross RUS boundaries and where further sensitivity analysis is required.

Once an agreed list of options has been generated these will need to be assessed to provide input to the appraisal process. Typically this will include:

- Revenue data
- Operating cost data
- Performance data (e.g. delay impact minute cost savings)
- Crowding – count data versus capacity provided
- Journey time benefits
- Social and economic benefits
- Fit with engineering access aspirations
- Fit with freight capacity outputs
- Fit with stakeholder objectives
- Practicality of implementation and availability of funding.

7.4 Appraisal

This stage in the process takes a limited number of options and compares them to a base case and to each other using, at present, standard DfT[1] or Scottish Executive[2] appraisal methods.

7.4.1 Method

In forecasting future demand, it is essential that a detailed, absolutely clear, specification of the base cases and options is provided.

To the extent that a timetable is to be specified, great care must be taken that the analysts in the consultancy fully understands the specification and that consequent benefits and cost predictions are correctly calculated.

For the cost side of the equation, a decision must be reached as to whether it is acceptable to use train or vehicle miles related unit costs or whether it is necessary to produce notional diagrams and use diagram related costs as well as train/vehicle mileage based costs.

7.4.2 Key passenger elements

- Revenue – MOIRA data or PLANET or bespoke model (if available).
- Operating cost – cost based on resource plans (for example the change in the number of diagrams). A reasonably sophisticated spreadsheet is needed for this.
- Performance – at present this is modelled outside of PLANET, increasingly using Railsys as the new standard tool.
- Load factors – PLATO data can be used, although this has limitations. PLANET data may also be used.
- Generalised Journey Time (dis-)benefits – PLANET data is normally used for this.

7.4.3 Key freight elements

Benefits – these need to include both financial and economic impact. To date freight appraisal has focused on non-user benefits

- User benefits – means benefits to both freight operating company and customer. Approach to date has typically taken the view that the user benefits balance with the costs and hence cancel each other out – although in practice this is not the case – it may be appropriate to assume that the 'revenue' (freight changes paid by customers) equates to FOC operating costs plus cost of capital (because it is a competitive market) but there will still be a user surplus on top of this where the customer is paying less than he would be prepared to. The DfT is continuing SRA work that started to attempt to put some values to this surplus.
- Non user benefits – environmental, road congestion, accidents. All these can be captured by Sensitive Lorry Miles (SLM), but this is not directly comparable with the non-user benefits required under the DfT (SRA) criteria for passenger appraisal. The DfT is working to converge passenger and freight appraisal methods in this area, but this may take some time. Some argue that SLM

[1] Appraisal Criteria, SRA, April 2003, and Addendum, SRA, June 2005
[2] Scottish Transport Appraisal Guidance (STAG), Scottish Executive, September 2003

overstates benefits, so it would be preferable to include specific assessment of congestion impact using the Mode Diversion Method (MDM) model – but so far this has only been used in parallel with SLM and confidence still needs to be gained in it. When modelling Freight Operating Company (FOC) costs it should be noted that this is usually not of relevance in the appraisal because it is balanced by the freight charges.

Where capacity is being considered, it may be necessary to assess the impact of freight path take-up on performance as in certain cases this may involve a significant performance worsenment.

7.4.4 Appraisal outputs

The appraisal must be good enough to satisfy the ORR and funders that appropriate recommendations are being made by the RUS. It is therefore essential that the results are well documented with assumptions and issues clearly highlighted and auditable.

The outputs must be presented in a standard format for each option, for instance structured into an Appraisal Summary Table and a Transport Efficiency Table. These will include lines of entry for each element of the appraisal, but the key indicators are usually:

- Benefit/cost ratio (BCR)
- Net present value of benefits and costs (NPV)
- NPV/K (where K is the cost of the option).

Each of these can be calculated to take into account purely financial or wider economic factors. A form of the economic BCR is the preferred indicator for DfT.

7.5 Solution selection and refinement

The appraisals process is often iterative. Some options will initially be rejected and others will be redefined; some may combine and some may subdivide. Once each option has been appraised then further conclusions can be reached. The appraisal output should state for each option:

(a) whether the option meets its objectives, i.e. does the option deliver against the gap it was intended to meet, and does it deliver a sufficiently large effect given whatever constraints were imposed;

(b) what the level of economic and financial benefits of the option are (this is to enable relative efficiency and attractiveness of options to be identified).

It is not the role of a RUS to devise a prescription for certain implementation on a part of the network. Options and their funding implications should be presented as a menu from which funders may select the future outputs of the network. However, the RUS must choose which options make it onto that menu, so each option should be either recommended or rejected. Recommended options should include a view on timescale and form of implementation, e.g. through the replacement franchise specification in year x; through the discretionary fund in year y; or through inclusion in the HLOS for control period z. Recommendations may be qualified if they are sensitive to key assumptions or if a need has been identified for more analysis in a particular area.

8. Documentation

8.1 Content of published documents

Two documents are published during a normal RUS development process – the consultation document and the final RUS. Both documents have three essential tasks:

- Describe the current situation and how it is expected to change over the period of the RUS. From this baseline analysis will emerge the gaps that need to be addressed by the strategy.
- Set out all the realistic options that address the issues in a logical framework, sift and evaluate them so that the good ideas can be distinguished from the bad.
- Put forward the best proposals to solve the problems, explain how they would work and what effects they would have, and how they would be implemented.

A typical format for a RUS will include the following chapters:

1. A **Foreword** – comment by the Network Rail Chief Executive setting the context for the RUS;
2. An **Executive Summary** – summarising the RUS document;
3. **Contents**;
4. **Background** – detailing the structure of the RUS and its purpose within the planning context;
5. **Context and scope** – setting out the scope of the RUS and its overall context within the suite of RUS documents;
6. **Current capacity, demand and delivery** – setting out the current baseline network and service capability;
7. **Anticipated changes in supply and demand** – detailing forecast demand (for freight and passenger) and identifying committed and planned changes to the network infrastructure and services;
8. **Gaps and options** – detailing the identified gaps and options assessed to meet those gaps;
9. **Consultation process and overview** – detailing the process for consultation on the RUS;
10. **Strategy** – setting out the strategy for implementing the RUS recommendations, timescales, the contribution to HLOS metrics, and consideration of alternative growth scenarios;
11. **Next Steps** – Detailing how the recommendations will be formulated through the Route Plans, what further analysis may be required, and the review process;
12. **Appendices**.

This structure has evolved through the first generation of RUS documents and will be used as the basis for the second generation RUS programme, although as these second generation RUS documents will build on the strategies established in the first generation RUSs, they may in certain cases reference the earlier RUSs, and the structure of the documents will further evolve as necessary.

8.2 Document preparation

In developing the RUS it is important that following criteria are achieved within the overall structure outlined in 8.1 above.

- Developing a storyline that demonstrates a logical flow from data research through to recommendation or rejection;
- Rigour in the process or demonstrating analytical data and supporting evidence, together with clarity of assumptions, exclusions and caveats;
- Clarity in the overall message, which will be available within the public domain;
- Clarity of context of the RUS within the overall planning process.

8.3 Review and Approval

Prior to publication of the consultation and final RUS, the conclusions reached must be agreed by the SMG. Additionally, the conclusions must also be agreed by Network Rail's Executive Committee.

9. Consultation

9.1 Stakeholder engagement and consultation

In order for Network Rail to deliver its licence obligation with regard to the production and maintenance of RUSs, stakeholder engagement will conducted throughout the process. This is mainly achieved through the Stakeholder Management Groups and Wider Stakeholder briefings that occur at prescribed stage in the development of a RUS (see section 2). Additionally as part of the process, bespoke one-to-one meetings will be arranged with interested parties as necessary. These will typically include groups such as Local Authorities, Regional Assemblies, Members of Parliament and Rail User Groups.

9.2 Formal Consultation

Having developed a RUS in consultation with key stakeholders and funders, Network Rail is required to publish the document as a draft document for consultation.

The RUS when published, will be available on the Network Rail website, and will be announced with a press release.

The formal public consultation period will normally be twelve weeks, but may be shorter if circumstances justify it.

Public responses to the draft consultation RUS will be accepted by both formally written response and by email response to a dedicated central e-mail address that will be provided for each RUS and which will be advised within each draft consultation RUS. All responses will be logged.

10. Finalisation

10.1 Review

The RUS process is designed to be inclusive, particularly so toward those parties with the largest interest in its outcomes. Hence, the formal consultation phase should not reveal any new issues from the key stakeholders who have been involved throughout the process. However, the issues addressed by a RUS are many-layered and the formal consultation can drive changes in at least two ways:

- Even with the best consensual approach involving the most knowledgeable parties, the issues are so complex that some may have been overlooked or misinterpreted. Data accuracy may be an issue. These things can often be picked up by parties further away from the process – the sort of parties who may make representations during formal consultation.
- Parties who have been involved in the process throughout may adjust their position when it comes to making formal representations. Sometimes this is because they genuinely felt unable to express their exact views in groups such as the SMG or the WSG, or it may be because the formal response has to be cleared at a higher level in the organisation than had been involved in the process. Either way, the formality of having to write down the organisation's view on the draft RUS is a useful discipline to tease out any lingering concerns.

During the consultation period, residual work is usually still taking place on aspects of the option appraisal. As issues are raised by consultation responses, this work can sometimes be reshaped to take the new issues into account. In any case, a thorough analysis of the responses is required at the end of consultation, and work could result in several areas:

- Challenges to baseline data or assumptions in the drivers of change – these can quickly be checked and corrected if necessary, but the implications must then be worked through the rest of the process
- Challenges to the gap analysis – a missed or wrongly-expressed gap could require completely new options to be developed and appraised
- Challenges to the options – mistakes could have been made during filtering for (e.g.) deliverability so options may have to be redefined and/or reappraised.
- Challenges to the appraisal – it's important to understand whether the criticism is that the method was not correctly followed, or that the method was not suitable. The former is straightforward to check and correct if necessary; the latter might only be resolved by some extra sensitivity analysis.

The review of the RUS will therefore by nature consist of correcting errors, updating data and in certain cases revising t recommendations. If the issues arising at this stage are significant then the interested parties should be involved in their resolution, as directed by the SMG. Following review, the final RUS is published along with the consultation responses.

10.2 Establishment

When a final RUS is published ORR has 60 days to consider the RUS, during which time it may issue a notice of objection if it considers that it is deficient in either of the following ways:

- It does not fulfil the requirements of condition 1 of the network licence or these guidelines;
- It does not adequately promote the route utilisation objective.

If no such notice is received, then at the end of the 60 days the RUS has become "established".

11. Process Development

The RUS process described in this technical guide will continue to be subject to evolution and change – where this is substantive the guide will be amended with the latest information.