Infrastructure Commission for Scotland

Call for evidence – Network Rail Scotland Response

May 2019

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Part A: Introduction

Network Rail Scotland welcomes the invitation to respond to the Infrastructure Commission Scotland's Call for Evidence. As the infrastructure manager for Scotland's Railway, Network Rail is uniquely positioned to contribute to this debate on the future direction of infrastructure planning in Scotland.

We welcome the opportunity to inform discussion on how infrastructure should be funded, as well as how different types of infrastructure interact, so that decisions made that alter one type of infrastructure take account of the impact this is likely to have on other forms of infrastructure.

Transport is key for enabling access to economic and social opportunities across geographies. Network Rail is well placed to contribute to discussions on how infrastructure can support inclusive growth and how well-developed planning policies can support a joined-up approach to infrastructure development, and essential to this, is placing infrastructure users at the heart of decision-making.

Finally, transport infrastructure investment is subject to well-developed appraisal and governance processes in Scotland. As a GB-wide infrastructure provider, Network Rail is well placed to advise the Commission on differences in governance processes across GB, and their implications for efficient infrastructure planning.

Ultimately, Network Rail views this Call for Evidence as the starting point of a relationship with the Infrastructure Commission Scotland and would like the opportunity to make more specific contributions across the areas discussed in this submission.

Part B: The rail network in Scotland

B.01 The rail network in Scotland

The railway in Scotland has 2,652 track miles, of which 650 miles is single track. A relatively high proportion of the network is mixed traffic, with freight traffic often coexisting with local and long-distance passenger traffic. 25% of the network is electrified, and this network supports approximately 60% of overall passenger traffic in terms of passenger miles.

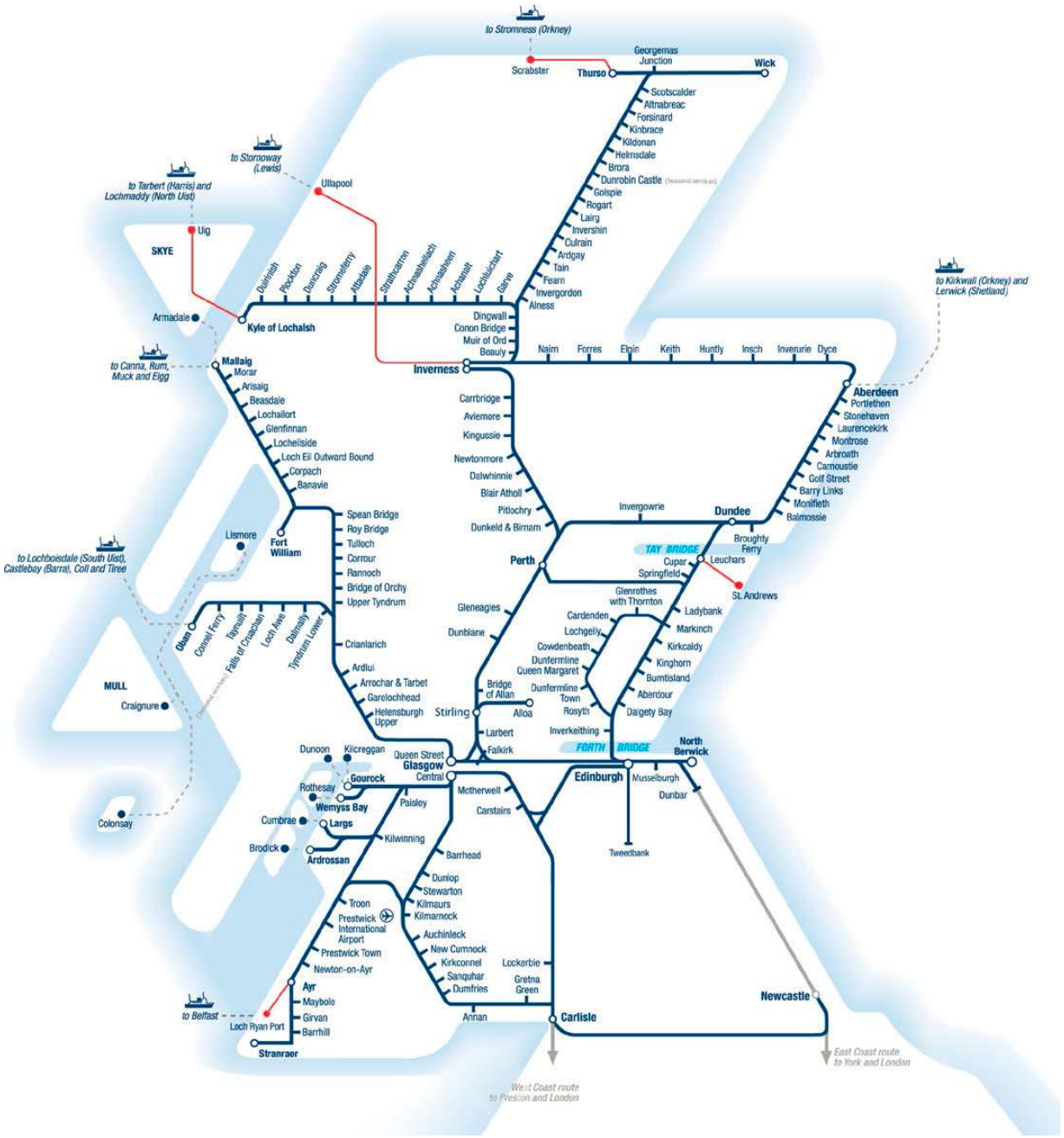


Figure 1: Scotland's railway network

The rail network in Scotland was substantially developed between the 1840s and 1900s, and many of the railway's civil engineering, structural and building assets date back to this period. The configuration of much of the rail network reflects the historical settlement and economic conditions of the time and was built initially to support heavy industry or agriculture, neither of which are significant rail markets anymore. However, the railway has shaped the way that modern Scotland has developed in a way which few other technological innovations can match and is still a vital economic asset.

B.02 The economics of the railway in Scotland

Given the disparity in population densities between the central belt and areas outside of the central belt, and the economics of rail which tends to support high volume flows into and between urban centres, the rail network in Scotland is well developed in terms of network coverage.

The relatively small size of markets outside the central belt mean that a high proportion of the network is single track which is limited in capacity. Even within the central belt, where long-distance traffic coexists with freight and local passenger traffic, there are relatively few sections of four track railway which would enable faster trains to pass slower ones. This again limits network capacity and the ability of the network to deliver high quality levels of punctuality with high volumes of mixed traffic.

The push to increase service provision on the network is the result of a long-term trend of increased demand for passenger and freight services, many of which have been accommodated on a network which (apart from some re-openings) has not changed substantially in scope for fifty years.

If further increases to service provision are required, there will inevitably be less scope for small scale responses and more major programmes of work such as the Edinburgh Waverley Western Approaches project will be required to meet these demands. In addition to the ability of the network to deliver current and future service specifications, it is worth mentioning that a high proportion of the assets which constitute our rail infrastructure are well over 100 years old.

When asset age is combined with the type of assets implied by the topography of Scotland (Scotland represents less than 10% of the GB's route mileage but far more than 10% of the GB network's structural and civil engineering assets[1]. This can make maintenance and renewal volumes relatively high in Scotland for civils and structural assets even though traffic density is less than on other parts of the GB network.

The lack of alternative routes between major centres on the network (apart from between Edinburgh and Glasgow) can also mean that maintaining, renewing and enhancing our assets can lead to significant disruption to passenger and freight customers, a recent example of this was the blockade required to deliver track capacity improvements between Aberdeen and Inverurie which closed this part of the network for 15 weeks.

Finally, it is important to note that the railway in Scotland requires a significant ongoing subsidy from the Scottish Government to remain financially viable, and the level of subsidy provided (a) reflects the value that the railway provides to the nation and (b) is a significant consideration for both the industry and its funders when making investment in the railway:

[1] - The Scotland Route contains 4540 Bridges (15.6% national total); 4267 Culverts (19.7% national total); 139 CERDS (28.8% national total); 3519 Retaining Walls (17.6% national total); 69 Tunnels (10.9% national total),

very often investment in the railway involves not only a capital outlay but also downstream commitments to additional subsidy for Network Rail and/or ScotRail.

B.03 A devolved railway

Since the 2005 Railways Act, railway funding and specification powers have been devolved to Scottish Ministers. The network has been extended as the following schemes have been delivered:

- Larkhall-Milngavie
- Stirling-Alloa-Kincardine
- Airdrie-Bathgate
- The Borders Railway

These are the most visible investments in Scotland's railway, but the network in Scotland has been enhanced significantly in less obvious ways since rail powers were devolved to Scotland in 2005. The delivery of the Edinburgh Glasgow Improvement Programme (EGIP), the rolling programme of electrification, improvements to the Highland Main Line, the Aberdeen-Inverness Improvement Programme and Paisley Corridor Capacity enhancements are good examples of the type of enhancements that have taken place. In addition, a wealth of smaller but no less strategic improvements to the rail network have been delivered.

Devolution of output specification and funding for infrastructure provision, in combination with devolved specification and funding of the ScotRail and Caledonian Sleeper contracts has undoubtedly underpinned the achievements of the railway in Scotland, achievements which are recognised across the UK.

B.04 Ownership and industry structure

Network Rail is an arm's length public body. Ownership of Network Rail resides with HM Treasury but is vested with the Department for Transport (DfT). Network Rail is responsible for operating, maintaining, renewing and enhancing the main line railway infrastructure of Great Britain.

Train services are operated by passenger train service operators (TOCs) and freight operators (FOCs). Most passenger services that operate in Scotland are specified and funded by Transport Scotland. The exception to this is cross-border services, which are specified by the Department for Transport (DfT) and a certain number of open access (charter) operations of which The Jacobite, which operates between Fort William and Mallaig, is a notable example.

The so-called vertical separation of infrastructure and operations has been in place since the 1993 Railways Act came into force. The Williams Review being carried out for the Department for Transport is currently exploring options for a new industry structure, although no decision has been made yet on what these changes might consist of or what the implications of any changes might mean for the railway in Scotland.

B.05 Funding and regulation

Network Rail, ScotRail and the Caledonian Sleeper are all funded by Scottish Ministers via Transport Scotland.

Funding for Network Rail is specified, along with the outputs it is required to deliver, every five years through the High-Level Outputs Specification (HLOS) and the Statement of Funds Allowed (SoFA). Since the start of the most recent regulatory Control Period (CP6, which covers the period between 1st April 2019 and 31st March 2024), the regulatory and funding arrangements for Network Rail have changed significantly.

Whilst Network Rail's allowable operating, maintenance and renewals costs have remained as per previous control periods, enhancements are now governed through Transport Scotland's Rail Capital Investment Strategy.

The Office of Rail and Road (ORR) is the independent safety and economic regulator for Britain's railways. It is responsible for ensuring that railway operators comply with health and safety law. It regulates:

- Network Rail's activities and funding requirements

- Access to the railway network
- Licenses the operators of railway assets
- Publishes rail statistics

The ORR is also the competition authority for the railways and enforces consumer protection law in relation to the railway.

B.06 Long term planning

Network Rail is required as part of its Operating Licence[2] to deliver efficient long-term plans for the network across Great Britain. Since 2014 it has delivered this through the Long-Term Planning Process, which consists of:

- Market Studies, which develop long term conditional outputs for connectivity and capacity which are informed by long term, scenario-based demand forecasts;
- Route Studies, which assess the network's capability to deliver these conditional outputs over a 30year time horizon; and
- Cross Boundary Analysis, which reconcile and propose ways of addressing network conflicts between different Network Rail route geographies.

The Scotland Route Study[3] was published in July 2016 and represents the most in-depth analysis of the demands that the network could potentially be subjected to and the capability and capacity of the network to accommodate these demands.

B.07 The Scotland Route Study

The Scotland Route Study (SRS) previously mentioned, is the most recent study to assess the current and future capacity and connectivity requirements of the network in Scotland. The SRS found that overall, adequate capacity currently exists to serve the key markets in Scotland, namely capacity into the key city centre employment markets in Scotland in Aberdeen, Edinburgh and Glasgow and the connectivity requirements expected of the network by funders and local authorities.

Scenarios developed to support the market study element of the SRS suggested that the risk on some routes into Glasgow and Edinburgh of crowding was substantial in all planning scenarios. Details of these routes are contained in the SRS and we can provide further supporting evidence of these findings if required.

[2] https://orr.gov.uk/__data/assets/pdf_file/0012/3063/netwrk_licence.pdf

[3] https://cdn.networkrail.co.uk/wp-content/uploads/2016/11/Scotland-Route-Study.pdf

B.08 The Glasgow Central capacity challenge

A key capacity challenge on the rail network in Scotland is the capacity constraint posed by Glasgow Central and its approaches. The Scotland Route Study's future forecasts of demand suggest that train services will need to be increased in frequency, however capacity does not exist at this location without having a significant impact on performance.

Glasgow Central is the busiest station in Scotland in terms of passengers (ORR, 2018). Any future enhancements to infrastructure to support future growth would be challenging and potentially highly disruptive.

The key to addressing this problem will be to develop a whole-transport strategy for the city which considers not only "hard" infrastructure interventions on the railway but also softer demand management interventions (including fares policies, ticket restrictions and timetabling changes).

The scale of the investment that could be required, necessitates that a wide range of potential alternatives need to be considered, to ensure that the opportunity provided by investment is not wasted, including non-heavy rail options.

B.09 The Edinburgh Waverley capacity challenge

Edinburgh Waverley is the second busiest station in Scotland (ORR, 2018) but the busiest one in Scotland with regards to long distance services. These services are important because along with Glasgow and Edinburgh airports, they provide the main means of arrival for visitors to Scotland. The disruptions that occur to these services in Scotland have reputational and demand impacts. Furthermore, they also require compensation to be paid to cross-border operators (most of which are funded by the UK rather than the Scottish Government).

The increasing importance of Edinburgh as a driver of economic growth in the Scottish economy means that there is a strategic imperative at a national level to support the development of housing within commuting distance of Edinburgh (see page 26 of the Scotland Route Study, 2016).

Several interventions have already been made to support this growth including the Airdrie to Bathgate line, the Edinburgh Glasgow Improvement Programme, Shotts electrification, the Borders Railway and the Stirling-Dunblane-Alloa project. The next corridor to be considered for significant improvement is the East Coast Main Line (ECML) to the east of Edinburgh out towards Dunbar and Berwick.

The Scottish Government has committed funding to deliver two stations on this line of route (East Linton and Reston), however significant improvements are likely to be required to accommodate this traffic and the anticipated increase in cross-border passenger and freight traffic.

A key consideration with all these developments, is the ability of the network to cope with disruption as service provision changes. 70% of total delay minutes are associated with knock-on (or “reactionary”) delays, therefore a focus over the next five years will be to increase capacity at key locations (for example, to the west of Edinburgh and at Portobello) to improve the overall performance of the network in this area.

B.10 The Revolution in Rail timetable changes

Abellio ScotRail is funding a £475m investment in new and upgraded rolling stock to complement the [£1,500m] investment in upgraded infrastructure delivered by Network Rail during Control Period 5. Reviews identified that the new class 385 and High Speed Train (HST) fleets were not being used to optimum benefit: HSTs were stopping at too many stations where the increased dwell time (compared to diesel units) was neutralising any journey time benefit from the enhanced performance of the train and the class 385 fleet could be utilised over a wider range of routes.

It was therefore agreed with Transport Scotland (TS) that the historical timetable could be reviewed and major enhancements introduced, providing stakeholders supported the changes.

A tiered timetable was developed which provided:

- Inner suburban services stopping at all stations nearest Edinburgh, Glasgow and Aberdeen
- Outer suburban services which ran non-stop to the inner suburban boundary and then stopped at all stations
- Intercity services which stopped at cities only and provided connections to the inner and outer suburban services.

The Revolution in Rail timetable delivers a step change increase in frequency at many stations, significantly increases capacity (seats provided) and reduces journey times however it did mean that some direct journeys (for example, from an intermediate station such as Carnoustie to Edinburgh) were no longer possible.

The timetable enhancement:

- Delivers Ministerial commitments for Highland Main Line and Aberdeen to Inverness CP5 enhancement projects
- Introduces more than 200 new services per day to deliver a step change in rail connectivity between Aberdeen, Inverness, Dundee and Perth and their respective local communities
- Introduces a new limited stop central belt to Aberdeen and Inverness timetable which reduces average journey times.

The timetable will be introduced in phases between Dec 2018 and May 2020 as ScotRail's new train fleets are introduced and Network Rail infrastructure works complete.

Benefits of the Revolution in Rail include:

Average journey times reduced from

- Stirling to Edinburgh from 55min to 45min
- Stirling to Glasgow from 35min to 25min
- Aberdeen to Edinburgh from 2hr28 to 2hr18
- Aberdeen to Glasgow from 2hr39 to 3hr30
- Inverness to Edinburgh from 3hr35 to 3hr20
- Inverness to Glasgow from 3hr20 to 3hr10

Adds >30,000 seats per day to services in East, Central and North Scotland.

Provides a minimum of an hourly all-day rail service, except at 10 stations in Scotland between Aberdeen-Inverness-Edinburgh-Glasgow. This makes rail a viable public transport mode for accessing Perth, Dundee, Aberdeen and Inverness for the first time in decades.

B.11 Relevant reading

In addition to the Scotland Route Study we have many underpinning documents that the Commission may wish to review including plans for Weather Resilience and Climate Change in Scotland, and individual asset strategies for each of our railway infrastructure asset categories (track, signalling, structures etc.) (Network Rail (Scotland Route), 2019).

Similarly, Network Rail's response to the National Transport Review conducted in 2017 may be of use for exploring the role of rail within the wider transport markets (Network Rail, 2017). However, recognising that these are both lengthy documents, we have chosen to signpost relevant areas where appropriate. Where this approach is not appropriate we have provided further responses as appropriate.

Network Rail would clarify that it is responding as a provider of rail infrastructure within the wider transport sector. We therefore recognise that our responses only relate to other sections within the transport sector in so far as they relate to the rail infrastructure.

High level overviews of the key rail planning issues in Scotland are contained in the Rail Delivery Group's Investing in the Future[4] and Initial Industry Advice for Scotland[5].

[4] https://www.raildeliverygroup.com/about-us/publications.html?task=file.download&id=469762881

[5] https://www.raildeliverygroup.com/about-us/publications.html?task=file.download&id=469771815

Part C: The role of the Infrastructure Commission for Scotland

C.01 The proposed remit of the Infrastructure Commission Scotland

Network Rail broadly supports the objectives the Commission set out as part of its remit and supports the inclusion of softer infrastructure such as education and cultural institutions, in addition to the physical assets present in Scotland.[6]

Network Rail recognises that maintaining a broad remit may be challenging in terms of keeping the planning of cross-sectoral infrastructure outputs focused, and in assessing the trade-offs between economic and other drivers for infrastructure works (especially with heritage, town planning and other environmental considerations).

C.02 The proposed objectives for the Infrastructure Commission Scotland

Network Rail is fully supportive of the objectives set out by the Infrastructure Commission Scotland as they may impact the transport sector. Transport in general and, rail in particular, supports the development of a high-skilled, high productivity economy and it is important that rail and broader transport outputs remain focussed on meeting these objectives.

However, although the rail industry (and Network Rail in particular) is well placed to take a view on the appropriateness of setting outputs to meet objectives, it is for the funders of the railway to establish the outcomes they want the railway to support in Scotland.

[6] It may be of value to articulate further how these link into the Scottish Government's Strategic Objectives (Scottish Government, n.d.) and align with the UN sustainable development goals (United Nations, 2015)

We would also suggest that the objectives of the Commission remain broad, for example, rather than a focus on flood protection, that climate change adaptation more broadly is considered, given that flooding is just one aspect of the hazards which climate change may pose.

C.03 The railway as a catalyst for economic growth

Like most forms of infrastructure – whether physical or human – transport infrastructure is a *necessary but not sufficient* component of economic development. With specific reference to transport, people tend to require transport services because they enable other (non-transport) activities to take place. It is from the opportunity cost of not being able to undertake these activities (for example, work or leisure time that is lost to travel) that transport derives its economic value.

It should be noted that an important driver of the growth in rail demand over the last 25 years has been a result of the refocussing of the UK and Scottish economies on city centre, office-based employment and away from activities such as manufacturing which tend to have less concentrated spatial distributions. The current policies of both the UK and Scottish governments do not indicate that there is likely to be any great shift away from this pattern in the short-to-medium terms.

External events (for example, the uncertainty created by any potential Brexit) mean that this pattern could potentially change, and any reversal of this pattern would have significant impacts on both the finances of the railway and the economic imperative on the Scottish Government to support the level of service provided today. The rail industry takes these potential structural shifts into account in its planning by developing planning scenarios to inform its long-term demand modelling.

The rail industry also aims to support the conditions required for sustainable, economic, and inclusive growth, recognising that it is not within our gift to deliver these outcomes, only to facilitate them. Through its strategic planning work, Network Rail works with the National Planning Framework to ensure alignment both with government and across sectors where appropriate.

C.04 The railway as a response to environmental challenge

The need to adapt our transport infrastructure and operations to both address and respond to the challenges posed by climate change is a high priority for the rail industry. This reflects the outputs set by the Scottish Government in its 2017 HLOS[7] and the Decarbonisation Challenge[8] set by the Department for Transport in February 2018. The rail

[7] https://www.transport.gov.scot/media/39496/high-level-output-specification-hlos-for-control-period-6-final.pdf

[8] https://www.gov.uk/government/speeches/lets-raise-our-ambitions-for-a-cleaner-greener-railway

industry is already taking steps to reduce carbon emissions on the railway and to become more resource efficient by 2040. The most recent publication on this was delivered by the Decarbonisation Taskforce led by RSSB, and further steps to build on this work are currently being investigated by Network Rail (RSSB, 2019).[9]

C.05 The impact of climate change on the railway

In addition to minimising the rail industry's impact on the environment (including climate change), climate change itself has and will continue to have an impact on both the demand for rail services and the ability of the rail industry to provide them efficiently.

The disruption caused by climate events can be significant, and disruptions to the rail network affect the industry's reputation for reliability and efficiency. For example, 2018 saw both the 'Beast from the East' in March closely followed by the record-breaking summer temperatures in July – both of which significantly and negatively impacted railway infrastructure. While at the opposite extremes in terms of weather, these events in quick succession serve to encapsulate the challenge faced by the network. That being, greater extremes of all types of weather – be that rain, heat, cold, snow or high wind and more and more impactful storms happening throughout the year. The network must prepare for, manage and recover from all such challenges whenever the need arises.

Similarly, climate change considerations place strain on our assets and introduce additional uncertainty into our asset management decisions. The Weather Resilience and Climate Change Adaptation Strategy (WRCCA) is available on our website which lays out our strategy for ensuring a safe and resilient rail network that takes account of potential future changes (Network Rail, 2017).[10]

[9] Further information on the decarbonisation task force can be found through the following link. Please note that the taskforce's final report is due to be published later this spring: https://www.rssb.co.uk/Pages/decarbonisation.aspx

[10] The WRCCA is available to view here: https://safety.networkrail.co.uk/home-2/environment-and-sustainable-development/wrcca/wrcca-strategy-2/

Part D: Drivers of demand for rail infrastructure

D.01 Key drivers of infrastructure decision-making

The key dependencies for Network Rail in terms of managing its infrastructure are economic growth, population growth and demographic changes, all of which alter the need for the various public services, of which the railway forms a part.

Economic growth is a vital driver of decision-making, both from the perspective of the capacity required to support a growing economy and also from the perspective of efficiently managing the costs associated with operating, maintaining, renewing and enhancing the railway in the face of increased demand for capacity.

The reversal over the last twenty years of a long-standing trend in post-industrial Scotland of population decline, is a significant achievement of policy making in Scotland (although it has coincided with significant growth at a UK level). Sustaining this growth, and fundamentally changing the demography is key to delivering the Scottish Government's objectives regarding economic growth and the maintenance of high-quality public services ("wealthier and fairer"). Any events, either policy driven or otherwise, which undermine this progress may threaten the achievement of further ICS or Scottish Government aims.

D.02 Drivers of rail market share

The other key drivers of rail demand are those that affect market share, these include fares policy, parking policies, road congestion, rail service provision and rail seating capacity.

In most markets in which the railway operates, the railway has a minority share of the overall transport market. The markets where rail is most dominant tend to be where a high volume of people or goods need to be transported at relatively high speeds into high density population centres, for example commuting markets. In Scotland, these markets are mainly focussed around Edinburgh and, in particular, Glasgow, although significant commuter markets for rail are also developing around Aberdeen.

High quality and relevant demand forecasting is crucial. This undoubtedly has an impact upon infrastructure specified and consequently how this infrastructure performs once it is delivered.

D.03 Responding to the MaaS challenge

A more fundamental challenge to the rail industry's ability to adapt to changed demand across the transport infrastructure (and specifically rail) is driven by developments relating to Mobility as a Service (MaaS) technology developments.

The feasibility of some of the more far-reaching MaaS concepts such as Connected Autonomous Vehicles (CAV), both regarding technical and public acceptability, has yet to be established. However on the basis of the support for MaaS from the political and transport industries it is incumbent on the rail sector to understand the economics of MaaS more thoroughly than it currently does, and in particular the markets where MaaS developments have the potential to erode or contribute to the growth of rail demand.

Network Rail is currently developing its policy in this area and would like to share emerging findings with the ICS.

D.04 Contributing to social cohesion

The reopening of the Borders Railway has improved both service delivery and community cohesion in the Borders area of Scotland, re-establishing a rail service between local towns and Edinburgh (Government of Scotland, 2014) for the first time in nearly 50 years. Likewise, the efforts which local campaigning groups put into gaining or regaining access to the national rail network through prosed station openings is testament to the value they place on rail in terms of local development and place-making.

As with all proposals to expand the role of the railway in Scotland, Network Rail has a positive role to play although it should be noted that funding and specification of the network in Scotland is the responsibility of Transport Scotland.

In February 2018 the Scottish Government launched their £2 million Local Rail Development Fund, designed to provide funding to develop community led options to improve local rail connections.

Part E: Integration of infrastructure planning with other land uses

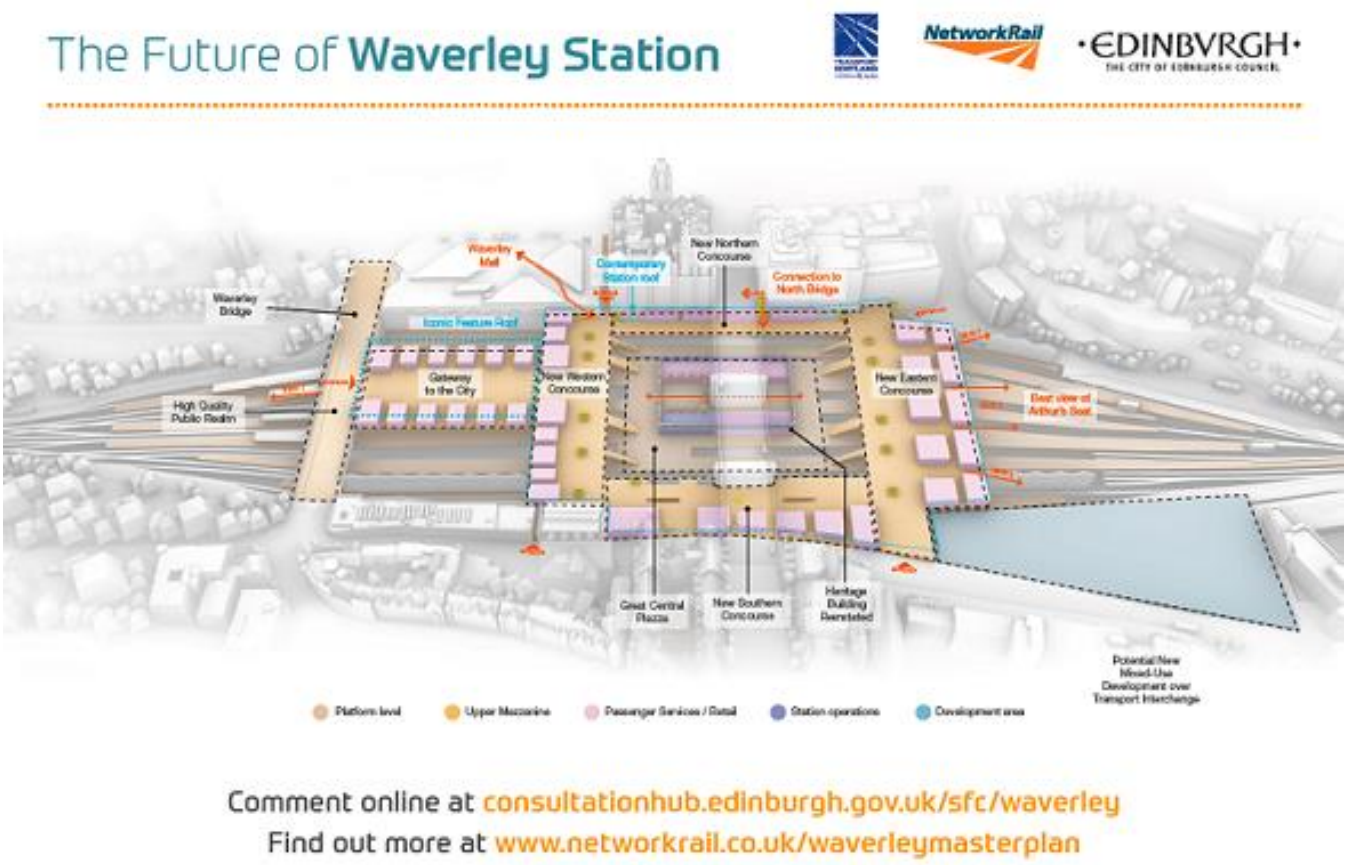
E.01 Interactions with land use

Transport is inherently linked to how we use land, and investment in transport infrastructure has the potential to change land use in ways which can be transformative, for good and for ill. Two recent rail-related examples exist in Scotland:

- The Borders Railway and its related initiatives including the Borders Blueprint[11] initiative; and
- Residential developments along the Airdrie-Bathgate rail corridor

Network Rail also recommends the emerging Edinburgh Waverley Masterplan and the works being carried out as Glasgow Queen St as examples which would be of use for the ICS in their work (Network Rail, 2019). Network Rail can provide access to the relevant members of each project team to provide specific evidence on the potential of each of these projects to drive change.

[11] http://www.bordersrailway.co.uk/media/2660/borders-railway-blueprint-pdf.pdf



The Edinburgh Waverly Masterplan

E.02 Integrated transport and land use modelling

Transport Scotland owns the LATIS Land Use and Transport Integration modelling suites. These models enable changes in transport provision to inform potential land use changes and to understand the impact of land use changes on transport demand. These models are necessarily high-level, and care must be taken to specify the correct modelling approach depending on the problem under consideration.

For instance, LATIS regional models are most suited to projects where a *transformational* change to connectivity is being proposed (for instance, in the case of new stations or new lines being proposed). The definition of what constitutes “transformational” change is of course subjective, but we would argue that it applicable to changes in the transport market which are sufficiently large in scale to spill over into other markets in a way which can be quantified.

For example, where changed transport provision leads to changes in land use that are likely to affect people’s decisions of where to live and work, or materially change the level of economic agglomeration then this should be modelled. This is not only because it helps to understand the likely downstream benefits associated with an intervention (for instance,

related to employment and overall economic output), but also because it helps us to understand the downstream costs in terms of congestion and the wider environment.

Many of the rail proposals currently under consideration are transformational in terms of performance (Edinburgh Waverley Western Approaches - WWA) and timetabling/seating capacity (East Kilbride) but are not transformative in terms of changing the scope of the rail network. Therefore, whilst LUTI models may provide useful insights into certain elements of these projects they are likely to be most productively used in combination with other modelling approaches.

In summary, Network Rail would recommend the development and application of the appropriate modelling framework to understand the strategic question under consideration rather than applying a standard approach across the board.

E.03 The Scottish Government's planning policies

Separately, the Scottish Government White Paper consultation in 2017 (People, Places and Planning) focussed on the importance of infrastructure to the delivery of the Scottish Government's development priorities. It is now being taken forward through the Planning Bill (currently at Stage 3).

In advance of the Bill process being completed and new legislation introduced; an Infrastructure Delivery Group has been established with terms of reference 'to promote and drive forward an infrastructure first approach to planning and development' by strengthening the relationship between infrastructure providers and the planning system; coordination and alignment of infrastructure providers with planning and delivery of development etc. Network Rail is represented on that group and a member of the Commission also attends. The Commission has a potential role in ensuring the work of this group aligns with activities out with the planning sector.

Network Rail has responded to a recent consultation by SEPA on its Strategic Infrastructure (Transport and Utilities) Sector Plan. We are generally supportive of the plan's objectives and proposal to work closer with SEPA and the rest of the infrastructure sector, but it is very ambitious and balancing existing requirements with other project objectives is already challenging. We welcome greater support to ensure and go beyond compliance but as a publicly-funded company we would need to ensure that we are funded for any additional costs arising from the plan. Without additional funding, there are numerous aspirations that the railway industry will be unable to fully achieve. The Commission could provide a useful overview of the impacts of one infrastructure provider on another.

E.04 the need for broader powers within the planning process

The importance of railway infrastructure and the need to enable efficient delivery of railway projects and running of the railway is recognised by special powers granted by a variety of

historic and general Railways Acts and other legislation. Some provide exemptions from legislation which would effectively prohibit the operation of the railway; such as our immunity from statutory nuisance provisions. Some such as permitted development rights conferred under planning legislation enable the prompt delivery of minor development without the need for any, or with only an expedited, consent process. Planning and enforcement appeals made by statutory undertakers, including Network Rail, are subject to referral to Scottish Ministers for decision.

Network Rail is also a statutory consultee in the development management process in respect of proposals which may impact on level crossings or are otherwise within a distance from the railway which may raise an asset protection issue. As Network Rail has no general compulsory purchase powers it must therefore rely on other processes such as Private Bills (such as the Airdrie to Bathgate Act) and Transport and Works (Scotland) Act 2007 (such as the Network Rail (Glasgow Queen Street Station) Order) to support development work which is not already consented or authorised. The Commission should consider reviewing and extending existing powers and providing new ones; for example, Compulsory Purchase Powers.

E.05 The need for more robust funding mechanisms within the planning process

There is a need for a mechanism to deal with the cumulative impact of several developments on infrastructure requirements which is not adequately met by current powers. There is a further issue of if/how uplift in land value is captured; for example, when a station is redeveloped, and surrounding land and property owners and businesses benefit, or a new route is opened and residential land and property values along the route increase.

Any new scheme should be flexible enough to be captured wherever the impacts are being generated and to be distributed to wherever the impacts need to be addressed. In some cases, this may be able to be addressed within one local authority or in other cases may cross local authority boundaries. There is a very high-level provision in the Planning Bill to enable this. There are many ways in which this could be delivered. Many have the potential to impact on our wider statutory duties and obligations and on our funding. These may be matters which the Commission could address.

E.06 Alignment of policies and processes

One of the current inhibitors of efficient infrastructure delivery is the lack of alignment between the external national, regional and local policy regimes which set the context for decisions on infrastructure planning and in the context of other development and delivery; and the internal funding, design and approval processes of the infrastructure providers.

The importance for Network Rail of engaging at the right time and at the right level in planning policy development should not be underestimated. Given some of the provisions of the Bill; ensuring key projects are embedded in appropriate planning and transport policy will become even more important to providing certainty and efficiency in consenting. While some of the changes proposed within the Planning Bill may address some of these issues; some go well beyond planning matters and could usefully form part of the consideration of the Commission.

Part F: Appraising and evaluating rail infrastructure investments

F.01 Developing enhancements on the back of planned renewals

The basic investment principle employed by Network Rail is that enhancements should – wherever possible – take place on the back of planned renewals activity. This approach contains an implicit assumption that the level of funding for current railway outputs remains broadly stable over time.

Where this is the case, renewals expenditure is included as part of the *do-minimum* in the business case for an enhancement and renewals avoided can be included in the *do-something* options. This will tend to improve the economic (value-for-money) case for investment.

However, whilst this general principal is sound, it is a cost-led investment principle, and may not take account of the need for the railway to remain competitive in the markets it serves or to develop new markets.

F.02 Deviations from a renewals-led enhancement policy

Where the Economic or Strategic cases within a business case suggest that an investment is required significantly before the end of an assets' economic life, there should be robust evidence to support such an investment.

Conversely, however, the investment policies should sufficiently flexible so as not to preclude it. In addition to this, asset management policies are based on models of asset performance. These models inevitably contain an element of uncertainty, and where evidence exists to support the early replacement of assets to improve the overall reliability of the network as a whole, (for example, in response to Weather Related Climate Change Adaptation or WRCCA) the asset policies should facilitate rather than obstruct this.

F.03 The Rail Capital Investment Strategy

Within transport, the STAG process is a strong process that correctly focusses on addressing transport problems and taking advantage of transport opportunities rather than promoting pre-conceived solutions. The Rail Capital Investment Strategy[12] sets out the investment process for rail with STAG at the centre of it.

Network Rail's view is that the Capital Investment Strategy is a strong basis on which enhancements to rail services can be planned. The High Level Output Specification (HLOS) and Statement of Funds Available (SoFA) approach to setting outputs and funding for operating, maintaining and renewing the railway is well established. The CIS provides a similar level of rigour to enhancing the railway.

The Capital Investment Strategy has a hierarchy for prioritising rail enhancements

- the ability to derive maximum utility from the existing network through whole industry measures that can make best use of existing railway assets, fully exploiting timetable/service-based opportunities and rolling stock options
- the ability to derive maximum utility from the existing network from opportunities (such as asset renewals or timetable exercises), fully exploiting these to ensure maximum value for money
- efficient and affordable, targeted investment in our infrastructure, in the right location and at the right time centred around whole industry measures to unlock additional capacity on the network

targeted investment to help reduce inequality and increase inclusive economic growth

[12] https://www.transport.gov.scot/media/41836/rail-enhancements-and-capital-investment-strategy-15-march-2018.pdf

It also incorporates STAG into rail investment, as part of the rail pipeline process.

F.04 Current schemes under development

The rail enhancements pipeline [Capital Investment Strategy, (Transport Scotland, 2018)] has recently been introduced to develop key rail projects from the start of CP6 (start April 2019) onwards. The schemes which Transport Scotland has prioritised for initial inclusion in this pipeline are:

- Growing Lothian and the Borders
- Seven Cities Connectivity: Perth to Glasgow
- Seven Cities Connectivity: Waverley Western Approaches
- East Kilbride – Glasgow Capacity improvements
- East Coast Main Line capacity + new stations

All these schemes are currently in their early stages, and business case development for these schemes is ongoing.

F.05 The Scottish Transport Appraisal Guidance

A key difference between transport appraisal in Scotland compared to the DfT's WebTAG approach is overall emphasis on the strategic and economic cases for investment. So, whilst WebTAG places a lot of importance on the quantified Economic Case (i.e. it has defined value for money categories against which scheme Benefit Cost Ratios are measured) STAG places far more weight on the strategic case for a scheme.

This is a difference in emphasis rather than policy, but it does have important implications for the development of transport business cases in Scotland, and potentially makes them more nuanced documents as a result.

F.06 Prioritising across sectors

Whilst the WebTAG approach in principle makes it easier to compare and prioritise across sectors, in practice the risks of adopting such an approach are significant and not only because of the obvious incentives that it provides promotors to maximise the quantified case for investment.

A more fundamental reason is that the purpose of cost-benefit analysis within an appraisal is to distinguish between different *options* in terms of their value-for-money.

Estimates of costs and benefits are based on forecasts of future economic conditions and are therefore subject to significant uncertainty (and are almost always partial in coverage as some welfare impacts cannot be robustly quantified). Uncertainty can relate to both costs and benefits, and because a probability cannot be assigned to uncertain events, it cannot be quantified.

Within a single sector, the decision-making risk associated with uncertainty can usually be managed because significant uncertainties are likely to be consistent *across options* (for instance, the link between economic growth and transport demand).

A risk of comparing benefit-cost ratios across different sectors is that establishing a common baseline for uncertainty will be challenging. Failing to achieve a common baseline will reduce the extent to which different BCRs are comparable, therefore reducing the quality of information available for decision makers.

F.07 Evaluation of rail investments

With regards to ex-post evaluation of rail projects, Network Rail would distinguish between:

- Firstly, has the intervention delivered the outputs required, and;
- Secondly, have the outputs specified supported the delivery of the desired outcomes.

With regards to the first point, the ORR regularly reviews Network Rail's performance against its scorecard. Similarly, Transport Scotland also monitors Abellio ScotRail and Caledonian Sleeper against their franchise agreements. However, both these processes evaluate performance against *outputs* rather than *outcomes*.

With regards to the second point, Transport Scotland has a programme of evaluations drawn up for major rail investments through which its rail re-openings are being subjected and, to the best of our knowledge, it is a leading exponent of ex-post evaluation in transport.

A key point to be recognised when evaluating rail infrastructure projects is that the realisation of outcomes can take a long period of time to take place and are likely to be the result of a lot of factors of which a rail investment will only be one.

A second point is the difficulty in tracking what is being evaluated. Very often, relatively small changes to service specification can have significant impacts on the outcome of a scheme, particularly with regards to network performance.

F.08 Evaluation of rail schemes in Scotland in an international context

HM Treasury's Magenta Book[13] sets out a sound process for evaluation and is an international benchmark for good practice. The Scottish Public Finance Manual[14] supports this. However, the relative lack of high-quality evaluations in infrastructure investment is not a problem of lack of process; rather it is more usually an unwillingness to view evaluation as an integral part of the appraisal process whereby the evaluation of one project improves the evidence base for the next project rather than a source of "guilty knowledge". Either way, project evaluation tends not to attract the resources or the political commitment on the part of public bodies that it should. In this context, the approach taken by Transport Scotland to evaluating its major rail schemes should be a useful starting point for evaluating infrastructure investments in Scotland.

Part G: Future Engagement

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[13] https://www.gov.uk/government/publications/the-magenta-book

[14] https://www.gov.scot/publications/scottish-public-finance-manual/documents/

Appendix

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