



Network Rail Scotland Route Study

Transform Scotland response

10 March 2016

1. About Transform Scotland

- 1.1. Transform Scotland is the national alliance for sustainable transport, bringing together organisations from the private, public and voluntary sectors. We campaign for a society where everyone can have their travel needs met within the limits of a transport system that is environmentally sustainable, socially inclusive and economically responsible.

2. Introduction

- 2.1. This Route Study is an important and welcome piece of work and points the way forward for the railway in Scotland over the long-term period to 2043. We are pleased to be able to offer comments and have aimed to set these at a strategic level rather than responding point-by-point to the details in the Study.
- 2.2. In our response we have not set out to detail the engineering aspects of how the railway in Scotland should be developed to meet long-term transport needs. This is a matter for Network Rail as the experts in this field. We have however considered the long-term strategic role of the railway and how it should fit and integrate with wider transport policy. A study looking as far ahead as 2043 cannot be confined to seeking improvements to the existing network. Society, travel patterns and population centres have all evolved and many areas are not well served by the existing network. We therefore recommend certain additions to the network to better serve the country.
- 2.3. We comment on the need to learn lessons from history and review current methods of transport forecasting. We are strongly of the view that current safeguarding of former rail routes is inadequate and lacks a strategic approach.
- 2.4. We recommend that specific strategies should be developed for inter-city routes, the major cities and rural routes. Freight on rail should be encouraged through more innovative approaches and the threats posed by climate change dictate that greater resilience is required in the network.
- 2.5. Finally, we consider which parts of the network should be electrified and ways to improve Anglo-Scottish routes.
- 2.6. It is our view that a network fit for the 21st century – considered over such a long timeframe – must be developed by all major players working in partnership and taking a strategic view of all transport modes and how they integrate: this is not a task for Network Rail alone.

3. Strategic Context and Lessons from History

- 3.1. We welcome this long-term view of the railway serving Scotland: railway infrastructure is a key asset serving Scotland's transport needs and it is right that a long-term strategic approach is taken in planning future needs. However, in our view, it is important to take on board lessons from history when planning for future transport needs as they should help to inform future policy.
- 3.2. Early railway development in Scotland and the UK as a whole was characterised by fierce competition between rival companies as opposed to a strategic approach to transport planning. This led to unnecessary duplication in some areas. However, the Marples/Beeching era of closures was again characterised by a failure to take a strategic approach to the railway's role in overall transport policy.

- 3.3. A disinvestment policy was then aggressively pursued whereby railway infrastructure was rapidly dismantled and the land sold off in a piecemeal fashion. More recently this had led to re-openings such as the Borders Railway costing far more than they would have done had the infrastructure been retained in public ownership. Indeed it is estimated that up to 40% of the cost of reopening was the result of acquiring and making good the breaches in the solum of the rail corridor by roads, houses, etc.¹
- 3.4. We are concerned that there is an ongoing danger of this policy being continued as former railway routes that may well serve future transport needs are still not being adequately protected by planning policies. Coupled with this it is not clear to us that this Route Study for the railway serving Scotland is being considered as part of a wider transport policy. As evidence we would cite the Highland Main Line and A9 corridor although the same applies to the Inverness to Aberdeen route alongside the A96 road. Here we have clear government commitments to dual the roads with construction proceeding apace and yet Scotland's Third National Planning Framework states "we want to make rail travel quicker than the car and to complete the electrification of the railway lines between the cities".² Current disjointed policies for road and rail will not achieve this wider objective. In fact it would be far more cost effective to proceed with upgrades to road and rail along these corridors in parallel. We have made this and related points in our *Inter-City Express* campaign: see <http://intercityexpress.transformscotland.org.uk> for further details.
- 3.5. To return to the Marples/Beeching era closures, the other main consequence was the isolation of many communities through the complete closure of railway lines or the closure of stations where the lines remained open. Since that time we have witnessed enormous changes in society and travel patterns and there are now many significant population centres with no rail service. It is therefore essential that this Route Study considers the opportunities to re-open lines and stations or indeed build sections of new route.
- 3.6. Further, we believe that tram-train technology should be considered as part of this Route Study and we have set out areas where this would be applicable in section 10 of our response.

4. Transport Trends and the Growth of Rail Travel

- 4.1. Throughout the era of railway closures a policy was pursued on the basis that the decline in rail use would continue and that road transport would be able to fulfil virtually all surface transport needs – contrary voices were ignored. However, the vital role and economic contribution of the railway are now well understood and the trends in transport use are stark. Growth in rail travel far outstrips trends in other surface travel modes and the number of rail passenger journeys in Great Britain has more than doubled between 1995-96 and 2014-15. The latest set of ORR statistics comparing 2013-14 and 2014-15 shows an increase of 4.5% in rail use and in Scotland the growth rate was 6.0% to reach a total number of journeys of 96.1 million in 2014-15.

5. Transport Forecasting and Strategic Planning

- 5.1. In our view the current models used to forecast passenger use for new stations and lines are now no longer fit-for-purpose. This is particularly so in Scotland where a series of re-openings since devolution have consistently outperformed the projections – in some instances by factors of two or three hundred percent.
- 5.2. Indeed in the latest case, the Borders Railway, the three stations in the Borders have performed hugely in excess of projections. In practice, in the first five months, Stow generated more than double the number of passengers that official forecasts predicted for a year; Galashiels three times the official forecast and for Tweedbank five times the number of passengers travelled in five months as was forecast for a year. The flawed forecasts resulted in a weaker business case, provided needless fodder to those who sought to criticise the government for proceeding with the scheme and led to cutbacks in infrastructure provision which now impacts on operational efficiency. Specifically, sections of double-track were reduced and all new bridges south of Gorebridge built to single-track width. This latter point is particularly relevant as while the railway infrastructure has been severely limited the road infrastructure on the over-bridges has been hugely over specified; for example, the minor road into Fountainhall village has been constructed to what appears to be trunk road width.

- 5.3. A key lesson from the Borders Railway must be equally relevant for other rural and semi-rural areas that have not enjoyed a direct rail connection to a major city since the Beeching era. Changes in society and travel patterns now indicate that other similar schemes such as the Buchan Line and the Levenmouth line would enjoy healthy patronage as people discover the ease of being able to travel by rail directly into a city centre. The other key lesson is the need to take a strategic approach to road and rail investment along transport corridors to gain best value for money. At the present time it is clear that upgrades to the A9 and A96 are proceeding in isolation from those to the parallel rail routes. As referenced above we see no evidence that a strategic approach to transport planning has been followed on these corridors.

6. Safeguarding Former Routes

- 6.1. Given the continuing growth of rail travel and clear government policies aimed at modal shift towards rail for both passenger and freight traffic we believe that it is essential to safeguard former rail routes. In section 3.3, above, we highlighted the additional cost of up to 40% of construction of the Borders Railway incurred by the failure to protect the former route.
- 6.2. We do not believe that existing planning policies are adequately protecting former rail routes; indeed we understand that local authorities are being *deterred* from following such policies unless “a clear rationale has emerged from an appraisal in line with standard practice and where viability has been established”.³ We are firmly of the view that planning policies need to be strengthened to protect all former rail routes that may at some future stage be required. Further we believe that a thorough survey should be undertaken across Scotland to establish an accurate database of former rail routes and their current condition. This could then be matched against a strategic plan of planned rail and station re-openings and new-build sections that should form part of this long-term route study. Until such work has been undertaken, the failure to protect former rail routes is merely repeating the mistakes of the past.

7. Expanding/Growing the Network

- 7.1. Over the timeframe of this Study we would expect a number of further route and station re-openings and some new-build lines. Those already re-opened have in almost all cases well outperformed their passenger projections – clearly showing the latent demand for rail travel. This is a reflection of the changes in society since the era of railway and station closures.
- 7.2. In east and central Scotland we recommend that the short branch lines to Levenmouth, Grangemouth and St Andrews are all worthy of reconnection to the network. In the north-east, Aberdeen is currently very poorly served by rail and re-opening some or all of the Buchan and Deeside Lines will help to address this situation.
- 7.3. The closure of the Longannet power station now presents an opportunity to extend passenger trains from Alloa through to Dunfermline via Culross – thus allowing connections to Edinburgh and Glasgow via this route.
- 7.4. In section 16, below, we have set out the need for alternative rail routes to the south and we believe that the full Waverley Route through to Carlisle should be considered for re-opening as such an alternative. The northern end from Hawick to Edinburgh is likely to attract significant traffic to and from Edinburgh – as already experienced on the re-opened line to Tweedbank. Further south, there is considerable potential for timber traffic along the route.
- 7.5. In section 9, below, we set out the potential for light rail and tram-train development in Edinburgh and Glasgow. It is essential that Network Rail and Transport Scotland work with the city and city-region authorities in a co-ordinated manner to ensure that these developments fit well with and enhance the existing network.
- 7.6. In terms of new stations on existing lines we do not intend to set out a long list but merely to draw attention to the many significant population centres alongside or close to existing railway lines which do not benefit from a station. The existing network should be enhanced to allow more stations to be opened on the network without impacting on journey times of longer-distance trains.

- 7.7. Finally we wish to comment on the need for some degree of new-build to enhance the network. In our view the most significant single improvement that can be made is the re-creation of a direct route from Edinburgh to Perth. This not only dramatically changes journey times from Perth and Inverness to Edinburgh but will also reduce journey times from Aberdeen by routing some trains via Perth. Parts of the former route can still be used but some new-build will be necessary.

8. Connecting the Cities

- 8.1. Train speeds and journey times on the Scottish inter-city network have shown no appreciable improvements in the last 20 years. In marked contrast, major improvements have been made on routes to the south with the fastest Glasgow to Carlisle journey time cut from 75 to 66 minutes (average 93mph). However the fastest Glasgow to Aberdeen train takes 153 minutes – an average of just 61mph. On the east coast, Edinburgh to Newcastle takes around 90 minutes while for a comparable distance to Aberdeen the journey time is nearer 150 minutes. For the Highland Main Line to Inverness journey times and speeds are even worse with the result that the train cannot compete with the car. Turning to the Aberdeen to Inverness route, it was back in 1994 when British Rail proposed 2 hour journey times – still many years hence under current plans. We believe that this is the last main line in Britain to have trunk telephone wires alongside the track and where single line tokens are still exchanged with the signalmen – perhaps delightful to see on a heritage railway but hardly appropriate to a 21st Century inter-city route.
- 8.2. All of the above paints a clear picture of an inter-city network which has been starved of investment while at the same time the Scottish Government in its third National Planning Framework clearly states “we want to make rail travel between cities quicker than by car and to complete electrification of the railway lines between the cities”.⁴ The picture for the A9 and A96 roads between the cities is one of marked contrast where £6bn of expenditure has been committed to a clear timescale to fully dual both roads. Here we would reference our comments in earlier sections of the need to take a strategic and multi-modal approach to transport planning. There is little point in “wanting” to make rail travel quicker while at the same time setting spending priorities in the opposite direction by focussing on dualling roads.
- 8.3. Our proposals for the inter-city network are clearly set out in our campaign document *Inter-City Express*.⁵ Here we propose full doubling and electrification of the routes from the Central Belt to Inverness and Aberdeen and a journey time of less than two hours from Aberdeen to Inverness. In addition we believe that the key to unlocking major journey time improvements from Edinburgh to the north is the re-creation of a direct double-track electrified route from Edinburgh to Perth. Some sections of new-build will be necessary and indeed desirable to create a faster and straighter route: this has the potential to reduce the journey time from Edinburgh to Perth to just 45 minutes.
- 8.4. As a final comment it is worth noting that the High Speed Trains being procured by ScotRail for these routes currently run on many routes at their maximum speed of 125mph. The maximum speed currently on the inter-city network is 100mph so there is a clear opportunity to raise this speed and improve journey times. It is also worth noting that these trains are now around 40 years old and new trains will in any case be necessary as the routes are electrified. Tilt technology could bring additional journey time improvements.

9. Serving the Cities

- 9.1. Scotland's four major cities have markedly different rail networks serving their city-regions and Aberdeen, Edinburgh and Glasgow are now all processing City Deals. These provide the ideal opportunity for Network Rail and Transport Scotland to work with those regions to develop city-region rail infrastructure appropriate for the 21st Century and more comparable to what we see in advanced European countries.

9.2. Aberdeen

- 9.3. For a city with a population of 229,000, the sparsity of rail services is stark, with the only lines approaching the city from the north and south both suffering from single-track sections. Opportunities exist to re-open all or parts of the Buchan and Deeside lines, opening up rail travel to areas currently unserved. The provision of

cross-city routes on these lines coupled with cross-city services on the existing lines would offer the city a more appropriate rail network.

9.4. Dundee

- 9.5. Whilst there are no obvious opportunities to re-open former routes, a cross-city commuter network could be created.

9.6. Edinburgh

- 9.7. As the capital city, Edinburgh fared particularly badly during the period of railway closures: its once-extensive rail network was devastated. Gradual improvements have been made including the re-opening of the Bathgate Line and the Borders Railway. The popularity of both routes shows the latent demand for rail travel into the city. Other routes such as the North Berwick Line and smaller stations on the Shotts line suffer from only an hourly service. Within the city, communities such as Portobello which once enjoyed regular trains to Waverley now see all trains pass without stopping and the Edinburgh South Suburban Railway sits under-utilised despite years of campaigns and numerous studies.
- 9.8. The development of the Edinburgh tram network will help to recreate some of the lost rail links in the city, including a north suburban loop. However it is essential that Network Rail and Transport Scotland work with The City of Edinburgh Council and others in the city-region to develop a co-ordinated approach to rail enhancements – both light and heavy rail. Particularly relevant is how to use the South Suburban line – an ideal candidate for tram-trains which themselves offer ways in which to expand the tram network.
- 9.9. A further pressing issue which must be addressed is the capacity on the eastern approaches to Waverley and this is dealt with separately in section 15 below.

9.10. Glasgow

- 9.11. Of all the Scottish cities, Glasgow suffered the least and retains much of its former railway infrastructure. However changes in population centres and travel patterns mean that many areas are not now well served by trains and, as with the other cities, the tram network was totally closed.
- 9.12. To further develop the rail network for the city and city region we are attracted to the proposals put forward by the Scottish Association for Public Transport (SAPT) for a 'ClydeMetro'.⁶

10. Tram-Trains

- 10.1. An earlier Network Rail consultation, *Network RUS: Alternative Solutions* (Sept 2012),⁷ considered the options for tram-trains in the UK and highlighted the benefits of light rail over heavy rail. A trial is underway in Sheffield and tram-train technology is well-understood and widely-used in continental Europe. We believe that it is now time to explore opportunities in Scotland. The obvious starting point is Edinburgh where trams are already running and we have referenced in section 9.8, above, some potential routes.
- 10.2. However, the ClydeMetro proposals promoted by SAPT are a further opportunity to develop this technology and increase the market for rail transport in Scotland.

11. Major Stations

- 11.1. We believe that future planning for the development of major stations must include other transport modes to ensure that stations become transport hubs where onward connections are made easy and convenient. As already referenced this means that the Route Study and its outcomes should integrate well with wider transport policy.
- 11.2. Passenger facilities at major stations are another area of key importance if rail is to continue to offer an attractive alternative to the car and flying. We would particularly reference Edinburgh Waverley Station where the current facilities fall far short of what should be provided for a capital city and the rail gateway to

Scotland for many travellers. Examples such as St Pancras and Manchester Piccadilly point the way forward for Waverley.

12. Electrification

- 12.1. In NPF3, the Government make clear that it wants to complete the electrification of the lines between the cities. We would support this but it is essential that the timescale for such work is at least as quick as that for dualling the A9 and A96 roads. In the Central Belt and Fife, infill electrification should be completed to create a uniform and more efficient rail network. As a key diversionary route the Glasgow and South Western Line should also be electrified. In section 16, below, we have advocated the full reopening of the Waverley Route from Carlisle to Edinburgh and whilst it would be desirable to fully electrify this it may be that the northern end commuter route into Edinburgh should be the earlier priority.
- 12.2. The Far North, West Highland, Kyle and Stranraer Lines do not justify electrification but we have outlined alternative strategies for improving journey times in section 13 below.
- 12.3. In section 9.3, above, we recommend the re-opening of all or parts of the Buchan and Deeside lines but we would not at this stage recommend electrification of these Aberdeen cross-city routes. The other routes that we recommend for re-opening are short in length and would qualify for infill electrification.

13. Rural Routes

- 13.1. Scotland's rural routes are noted for their scenic attractions and have the potential to play a much wider role in boosting the economies of the areas they serve. They regularly feature in international awards and most recently the *Lonely Planet's Best In Travel 2016* guide has named the Caledonian Sleeper's route as top journey.⁸ However, to ensure that they adequately serve both local communities and tourists, we need a clear plan for their development and improvement. Journey times already compare unfavourably with those by road and the gap will widen unless steps are taken to improve the rail routes.
- 13.2. We would expect to see the development of Network Rail's digital railway programme to deliver more efficient signalling for rural routes and so improve journey times. For example, on the West Highland Line from Glasgow to Fort William we believe that the current method of signalling plus the splitting/combining of trains at Crianlarich adds 20% to journey times.
- 13.3. During the timeframe of this study, new rolling stock will certainly be required. This offers the opportunity to procure something more appropriate with better acceleration qualities and tilt technology.
- 13.4. Selective infrastructure improvements will also be required to improve the capacity of these predominantly single track routes for both regular passenger, charter and freight traffic. This taken together with signalling and rolling stock improvements is required to ensure the long-term future of these routes.
- 13.5. The study makes modest proposals for the Far North Line but we believe that it is now time to develop a clear strategy for each rural route.

14. Freight

- 14.1. There is a general desire to see more freight carried by rail as this would bring environmental improvements as well reducing congestion and accidents on the road network – and this is the stated policy of government.
- 14.2. However, this will require additional capacity on the network and a more can-do attitude from Network Rail. We would wish to see innovative low-cost solutions being promoted and adopted by Network Rail, ones that are appropriate to local circumstances as opposed to ones that are derived from national standards and appear to many to be 'gold plated'. One example might be the use of the Non-Intrusive Crossover System as currently being examined by Hitrans for loading timber on the Far North Line.

- 14.3. Another key element in creating the right environment for more rail freight is the role played by local authorities through their planning policies. These might either encourage or discourage the development of rail freight facilities: we hear of too many examples of the latter being the norm. There is a role here for national government to set clear guidance that will encourage the development of rail freight facilities.

15. Anglo-Scottish Routes

- 15.1. At the time of writing we are not aware of the detailed proposals for High Speed Rail services to Scotland and so may at some future date wish to amend our comments on these routes and comment further on the stations locations in Edinburgh and Glasgow. However, it is our assumption that a target journey time of three hours from Edinburgh/Glasgow to London will be achieved by a combination of improvements. We envisage upgrades to the classic routes to increase line speeds and new cut-offs being built. This will then enable classic compatible trains to achieve the three-hour journey time. In our view, these trains should be built with tilt as are the existing Pendolinos.
- 15.2. It is important that the focus is not merely on journeys to London as there is significant traffic – and much more potential traffic – to the north and midlands of England. In this section we are confining our comments to the two existing routes to the south: the WCML and the ECML.
- 15.3. The WCML suffers from severe restrictions at Carstairs and an upgrade here is long overdue; additionally, upgrades further north and on the approaches to Glasgow Central are required to improve journey times and relieve congestion on the route. If it is decided to construct some form of Y-shape cut-off south of Carstairs to facilitate faster approaches to Edinburgh and Glasgow then the Carstairs upgrade may take a different form. However, it is essential that whatever is decided this work goes ahead as a matter of priority as the current 15mph restriction through Carstairs adds significantly to journey times.
- 15.4. The ECML approaches to Edinburgh Waverley are severely restricted and it is our understanding that there are only 8 train paths per hour from the east as compared to 28 from the west. The need for upgrades is urgent. Several operators wish to run additional services south on the ECML, the North Berwick Line suffers from only an hourly service during the week, Dunbar services are irregular and the new Borders Railway services suffer from delays from Portobello Junction into Waverley. We are not able to comment on the detailed engineering aspects of how improvements may be made to increase train paths. However, it appears to us that one or both of the Calton Tunnels should be re-doubled, a four-track railway re-created to Portobello Junction and the junction itself upgraded to high-speed running. This would allow for the re-opening of the Abbeyhill loop and the creation of stations at Abbeyhill and Portobello. Further south, additional loops may well be required to allow for more freight and local passenger services.

16. Future Resilience/Alternative Routes

- 16.1. It is now clear that the impacts of climate change will be unpredictable and severe. To avoid serious disruption to rail services the existing network will need to receive significant upgrades.
- 16.2. The effects were highlighted by the recent complete closure of the WCML at Lamington viaduct. Whilst a diversionary route was available for Glasgow passengers via Dumfries, the route is not electrified and still contains sections of single track. Edinburgh bound passengers were not so fortunate and had to endure a two and a half hour bus journey. The impact on passenger numbers was severe. For example; the single bus replacing the 08.52 southbound train to Birmingham and Euston from Edinburgh on 11 February carried just 25 passengers – a service that would normally be covered by a 10 or 11 car train. The economic consequences of such route closures are severe: in February 2014, the eight-week closure of the Great Western route at Dawlish cost £1.2bn in reduced economic activity. Glasgow Chamber of Commerce has suggested that the city's financial performance will take a similar hit.⁹
- 16.3. The lessons are clear: the existing network must be upgraded to better withstand severe weather and appropriate alternative routes should be provided. For the Anglo-Scottish routes, this should include the full double-tracking and electrification of the Glasgow and South Western Route and the re-opening of the complete Waverley Route from Carlisle to Edinburgh. For the internal Scottish inter-city network, appropriate

alternatives are no less important and we believe that schemes should be devised to re-open the direct route to Perth from Edinburgh as already referenced above in section 7.7. Furthermore the former Strathmore route to Aberdeen from Perth offered a quicker journey time and would provide an inland alternative to the vulnerable coastal route. We recommend that detailed studies should be undertaken into the options for re-opening this route.

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- 1 David Spaven: *The Waverley Route: The battle for the Borders Railway* (Argyll Publishing, 2015).
 - 2 See section 5.17 of <http://www.gov.scot/Publications/2014/06/3539/6>
 - 3 Letter from transport minister Derek Mackay MSP to chair of Scottish Parliament rail cross-party group John Mason MSP. Letter does not appear to have been published online at time of writing, but the correspondence is referred to in agenda for 01/03/16 Rail CPG meeting. Copy of letter available from us on request.
 - 4 See section 5.17 of <http://www.gov.scot/Publications/2014/06/3539/6>
 - 5 Available for download from <http://transformscotland.org.uk/what-we-do/campaigns/inter-city-express/>
 - 6 See SAPT response to this consultation.
 - 7 Available at <https://www.networkrail.co.uk/browseDirectory.aspx?root=&dir=\RUS%20Documents\Route%20Utilisation%20Strategies\Network\Working%20Group%205%20-%20Alternative%20Solutions\Draft%20for%20consultation%20and%20consultation%20responses>
 - 8 Source: 'West Highland News Plus - Spring 2016'.
 - 9 Chief Executive Stuart Patrick quoted in *Rail* magazine.

Transform Scotland is the national sustainable transport alliance, campaigning for a more sustainable and socially-just transport system. Our membership includes bus, rail and shipping operators; local authorities; national environment and conservation groups; consultancies; and local transport campaigns. Transform Scotland Limited is a registered Scottish charity (SC041516).

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