

SCOTLAND 2020-2040

Major Rail Network Extensions

: Potential Roles in an Improved and Inclusive Low Carbon Transport Network

A Discussion Paper

JANUARY 2016 Tom Hart

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Comments – including suggestions for deletions, additions or changes in priorities - are invited on this Discussion Paper by **Friday 25 March, 2016** and should be emailed to Tom Hart at thstsg@btinternet.com. Copies of the Discussion Paper can be emailed on request.

Author's Background Tom Hart is a retired lecturer in Economic History at Glasgow University. He has written extensively on transport and environmental issues, including the 1999 publication on *Transport Policy Options for a Sustainable Scotland 2000-2020* and the 20th century Rail, Road, Ferry and Socio-economic Impact chapters in the 2009 volume on *Scottish Transport and Communications* edited by K Veitch and published by John Donald. He is a Past President of the Scottish Association for Public Transport, a former Chair of the Scottish Transport Studies Group, a member of the Scottish Transport Statistics Advisory Group and an Appointed Member of Strathclyde Partnership for Transport (SPT). The 1999 publication was reappraised in an STSG electronic publication in February 2015 which included revised Scenarios for changes in both the volume of movement and modal share to 2040. The views expressed are personal and aim to assist debate, and decisions, on evolving programmes for the 2020s and 2030s.

SUMMARY

- 1** Rail passenger use in Scotland is showing record growth and this trend is expected to continue. In contrast, car use per head is likely to stabilise or fall as business and personal preferences for rail travel rise
- 2** This change of trend offers significant economic and social benefits which can be further increased by a rise in cost-effective rail investments. Early priorities should be extra rolling stock, a rolling electrification programme and other continuing improvements on the existing network. These will account for the bulk of rail infrastructure investment but this Discussion Paper has a focus on opportunities for network extension
- 3** Constraints on network capacity and the need to provide a more inclusive network require option appraisal NOW, and related land safeguards, for major projects deliverable by 2030 and potentially deliverable by 2040 as part of a national network ensuring that trip times and fares by rail compare favourably with car use – and improve travel opportunities for tourists and for a substantial number of residents without easy access to cars.
- 4** Part 4 suggests five projects for the 2020s for further appraisal. Part 5 considers tentative projects for the 2030s. The outcome could be 60 miles of new route by 2030 (compared to 73 miles opened between 2000 and 2015) with a strong case for a further 150 miles by 2040.
- 5** Views are invited on these suggestions and alternatives by **25 March, 2016**. These will form a valuable contribution to Scottish Government plans, following the May 2016 election, for a review of transport spending and priorities to 2040 in conjunction with a further revision of the National Planning Framework and the final version of the 'Route Study' to 2043 on which Network Rail Scotland is now consulting with comments sought by **10 March 2016**.

1 Introduction

1.1 Since the late 1990s, rail passenger use in Scotland has shown record growth while car use per head has stabilised. Passenger kilometres travelled by rail in Scotland are now at their highest ever level with growth expected to continue over the years to 2040. Rail passenger kilometres are up 50% since 2001 compared to a 7% rise in car vehicle kilometres (see Table below). Network Rail expect a further 50% rise by 2023 continuing at a lower rate to 2043 exclusive of the added impact of Anglo-Scottish HS2 services

Passenger Movement by Rail and Road in Scotland

	RAIL Passenger Kilometres (million)	ROAD Car Vehicle Kilometres (million)
2001	1,969	31,904
2006	2,338	34,466
2013	2,828	33,811
2015	3,000 (est.)	34,000 (est.)

Source : Annual Scottish Government publication *Scottish Transport Statistics*

Notes : Finalised data for 2015 has still to be published but rail passenger kilometres have risen due to continuing growth on the existing network plus opening of Borders Rail in September 2015. Automated road count points show a modest recent rise in total road vehicle kilometres almost entirely confined to the light van sector. Car vehicle kilometre data also conceals the fact that average car occupancy has been falling in recent years

1.2 Containerised rail freight and some bulk movements are also showing potential for growth. This major change of trend since the 20th century boom in road use and rail decline shows that an improving rail network is of increasing importance for a well-connected, yet inclusive, low carbon economy. It raises a question-mark over the present scale and economic outcomes of proposed trunk road investment. Severe pressures on public funding also raise the issue of the relative priority given to rail and road in capital and current spend in comparison with government priorities for other sectors.

1.3 As part of a continuing pursuit of sustainable growth, low carbon and a more inclusive society, maintenance of present spend on rail capital investment (exclusive of separately funded HS2 spend) is essential. This must be part of an investment and management restructure improving overall value and aiding further shifts from car and HGV use to rail – while also releasing funds for improved local road and pavement maintenance and an added momentum for cycling, walking and effective co-ordination of transport services and ticketing.

1.4 Early priorities should include more rail rolling stock, extra platforms, improved interchanges, further rail electrification, some new stations at suitable locations and other measures to raise capacity on the existing rail network – not only on longer distance services but also for more localised travel in, and around, Scotland's cities and in popular tourist and leisure areas.

1.5 These topics will be addressed by the Scottish Government both in the 2016-17 Budget and in fuller consultation and revision of transport programmes and policies to, and beyond, 2020. Improving the existing rail network, and connections to and from it, must be an immediate priority yet further rises in rail use – and gaps in the 'connectivity' offered by rail – make it desirable to select and deliver Major Projects including network extensions. The final version of the Network Rail 'Route Study' needs to include consideration of network extensions.

1.6 This Discussion Paper outlines Major Projects which may merit evaluation for possible delivery in the 2020s together with tentative suggestions for the 2030s. The Paper is being made available in electronic format with comments invited to thstsg@btinternet.com by **25 March, 2016**. Due to the varied options available, suggestions relating to city Metro, light rail or tram/busway routes are given fuller coverage in APPENDIX 1.

2 Rail Network Extensions 2000-2020

2.1 The 1999 Report on *Transport Policy Options for a Sustainable Scotland* contained Five Priority Schemes and five others for further consideration (see Appendix 2) The five priorities were:-

- | | |
|--|---|
| 1 Glasgow Airport Link | 4 Livingston-Edinburgh Airport- Cowdenbeath (via Forth Rail Bridge) |
| 2 Cross-Glasgow Link (North-South) | 5 Edinburgh-Galashiels-Carlisle |
| 3 Stirling-Alloa-Longannet-Dunfermline | |

2.2 The outcomes were:-

- 1 was dropped by the Scottish Government at a late stage in development but with ongoing examination of new proposals which might allow a cheaper opening by 2025
- 2 remains under discussion as most related track is still in use for train transfers or safeguarded but with varied views on how passenger services might be restored
- 3 was implemented, including restored passenger services between Stirling and Alloa plus diversion of Longannet coal (formerly using the Forth Bridge) to reach Longannet via Stirling – with this traffic now likely to cease on the closure of Longannet in March 2016)
- 4 A variant of 4 was the Scottish Government plan to divert main line services to the west and north under Edinburgh Airport, later abandoned on cost grounds and with preference given to completion of the Edinburgh tram to the Airport. The North Queensferry-Cowdenbeath section of 4 was included in the Scottish Strategic Projects Review and also features in the NR 'Route Study'
- 5 was implemented in part with passenger reopening from Edinburgh to Tweedbank

2.3 Projects 6 to 10 were more tentative with Project 7 influenced by longer-term decisions on the Anglo-Scottish High Speed Rail and expanded freight usage (see Appendix 2)

2.4 Three new sections of route not on the 1999 list opened – these being the delayed **Hamilton-Larkhall** project in 2005 (not included on the 1999 list as early agreement on this scheme was expected), the major **Airdrie-Bathgate** reopening and electrification in 2010 (given priority over Glasgow-Edinburgh via Falkirk and via Shotts electrification in the Final Report of the Central Scotland Multi-modal Corridor Study) and the opening in 2014 of the truncated Airport to York Place section of the initial **Edinburgh tram** proposals

2.5 In total, **73** route miles of track opened between 2000 and 2015, made up of reopened passenger services Hamilton-Larkhall (4), Stirling-Alloa (7), Drumgelloch-Bathgate (13), the Edinburgh tram route (9) and Portobello Jc-Tweedbank (33) plus 7 miles of freight only line Alloa-Longannet. Given the Scottish Government's emphasis on a more inclusive network and low carbon, there is a need to consider what further extensions may prove justifiable between 2020 and 2040.

3 The Current Situation

3.1 The appointment of a **UK National Infrastructure Commission**, chaired by Lord Adonis, and Scottish Government plans for revision of **Scottish Transport Strategy and Funding** after the Scottish Parliament elections in 2016 gives an opportunity to evaluate past plans for major rail projects and to look forward. This will be linked with an update of the **National Planning Framework** for Scotland while **Network Rail Scotland** is now consulting on a '**Route Study**' providing information to aid decisions on rail investment priorities over the years from 2018 to 2043. Finalised NR plans will depend on ORR and Scottish Government appraisal of whether proposals match available funds. Unlike the draft 'Route Study', finalised plans need to include evaluation of some network extensions as part of Scottish Government priorities for social inclusion and a spreading of economic activity

3.2 As expected, the draft Scottish Budget announced in December saw total spend cut slightly but a substantial rise in Health spend largely balanced by a fall in allocations to local authorities. Council Tax remains frozen. Infrastructure, Investment and Cities spend is up £31m but includes spend outwith transport. As spending on the new Forth Crossing begins to fall, two small schemes have been added to the roads programme, the Dalry Bypass and work on the Haudagain roundabout in Aberdeen. No new rail schemes are added. Stress is placed on further public service reforms to cut costs yet ensure more efficient delivery. There is no explicit reference to the annual payments to Abellio ScotRail but there may be pressures to reduce this sum as part of the Alliance with Network Rail Scotland. Savings arising, along with a cut in trunk road spend, could be used to expand rail infrastructure investment.

3.3 Beyond 2020, a revised Scottish Transport Strategy is likely to include more substantial improvements in the existing network, including better interchanges and continued electrification – likely to extend to Aberdeen by 2030 and Inverness by 2040. But it is of increasing importance to consider major new construction, or line reopening, to provide shorter trip times, extra capacity and more inclusive access to the rail network. Improvements within the existing network, often capable of quicker and cheaper delivery, will remain very important as will shorter rail extensions to improve city transit and to areas such as to Levenmouth and St Andrews – where trackbed is available and usage prospects encouraging. This Discussion Paper has a focus on the rationale for more substantial network extension.

3.4 It suggests evaluation from 2016 of Five Priority Schemes plus eight tentative suggestions with a view to a delivery programme to 2030 and further additions by 2040. Due to current problems of funding, skill shortages and legal delays, no further major network extensions are expected before 2021. Subsequently, a minimum average of 6 route miles per year is suggested (slightly above the average of 5 miles per year delivered between 2000 and 2015) potentially rising to between 15 and 25 miles per year if evaluations are favourable. This would involve 60 miles of new route by 2030 with a further rise of around 150 miles by 2040 (or 250 miles in the unlikely event of all 'wildcard' schemes being completed). Allowing for the possibility of some closures, the total rail network (including city transit) would rise from 1760 route miles in 2015 to around 1,900 miles by 2040. Views are invited by 25 March 2016 on deletions, additions or changes in priority between the 2020s and 2030s.

4 Projects for Evaluation for possible delivery 2021-30

4.1 The most promising prospects 1 HS2 Scotland Phase 1

2 Tweedbank-Hawick

3 North Queensferry-Cowdenbeath (north)

4 Glasgow Airport & Glasgow south to north

5 Phase 1 : City Transit- Glasgow, Edinburgh, Aberdeen (see Appendix 1)

4.2 As mentioned at 3.4, funding, skill shortages and legal issues are likely to place severe constraints on rail spending on network enhancements until 2020 unless making significant contributions to lower maintenance costs and/or ensuring further rises in usage, income and shifts from car and HGV use. Nevertheless, the current Scottish Route Study by Network Rail and revisions in Scottish Transport Strategy (including some shift from trunk road spending to rail schemes) need to include evaluation – and any necessary land safeguarding - of larger schemes for the 2020s and options for the 2030s. The proposals are influenced by the Scottish Government emphasis on an inclusive economy and the stress in the present National Planning Framework on the importance of rail inter-city and inter-regional trip times being lower than by car. Added emphasis is also required on service frequency, fare levels (relative to charges for road use), reliability, comfort and co-ordination with other modes.

4.3 Project 1 HS2 Phase 1 A UK/Scottish Government Report on Anglo/Scottish High Speed Rail is promised for February 2016. This is expected to focus on new construction within England though with route upgrading north from Preston and some limited new build in Scotland by 2030. The aim of both governments is 3 hour trip times from London to Glasgow and to Edinburgh. To attract a greater proportion of UK domestic air travel to Anglo-Scottish rail services and decrease longer-distance car trips, it is desirable that plans should deliver 3 hour timings by 2030. The UK Government has already announced that continuous high-speed route from London to Crewe will open by 2027, six years earlier than planned. Given an extension of new route to just south of Preston plus upgrades northwards and some new construction in Lanarkshire, 3 hour times are deliverable by 2030, based on a 1 hour 15 minute London-Preston time and 1 hour 45 minutes on to Glasgow and Edinburgh. In Scotland, new track could be provided on the east side of Glasgow as far as Motherwell or on a more northern route as far as Law Junction (such an approach is also reflected in the NR '*Route Study*') In addition, a link from Law to Breich could offer 30 minute trip times between Glasgow and Edinburgh by 2030 (as previously promised by the First Minister with completion by 2024). The final selection of HSR Phase 1 new route will have to be compatible with decisions on HSR Phase 2, including construction costs and decisions on terminals for HSR trains in Glasgow and Edinburgh (with Glasgow Central and Haymarket the most likely choices)

4.4 Project 2 Tweedbank- Hawick This section was not included in Phase 1 of the Waverley Route due to the extra cost of extending the route through Melrose where the road bypass utilises the former rail route. A southward relocation of the bypass would be required but restoration of the former route onward to Hawick raises fewer problems and would restore this other major Border town to the rail network. Trip times to Edinburgh could be less than 1 hour (and Galashiels-Edinburgh times also improved) if separate local trains were introduced from Edinburgh to Midlothian with Galashiels –Edinburgh trains falling from 7 intermediate stops to 1 or 2 stops

4.5 Project 3 North Queensferry – Cowdenbeath (north) This route close to the M90 was included in the previous Major Transport Projects Review and , in a modified form, is included in the '*Route Study*' for completion by 2029 as a desirable prerequisite of electrification through Fife. It offers two advantages of increasing importance:-

- a) allowing, along with upgrading of sections of route north from Cowdenbeath to Perth and to Dundee to 125mph standards, 36 minute non-stop times from both Perth and Dundee to Edinburgh Gateway station (due to open in 2016) and 45 minutes to central Edinburgh
- b) allowing a more intensive suburban service of 3 rather than 2 trains per hour from Edinburgh to both Dunfermline and Kirkcaldy (giving a regular 10 minute service to Inverkeithing)

4.6 Project 4 Glasgow Airport and Glasgow south to north services Revival of a modified short spur into the Airport with 4 trains per hour to Glasgow Central and an additional 2 trains per hour using the existing track between Shields Road and Bellgrove via Glasgow Cross running through to Croy or Stirling, allowing Airport access from the east and north with only one interchange (at Croy, Stirling or Glasgow Central). This would ease pressures on the M8 and problems of finding extra car and taxi parking and drop-off/pick-up facilities at Glasgow Airport. It would attract higher use than the alternative of an automated shuttle between the Airport and a rail interchange in Paisley (at Gilmour St or in the St James area)

4.7 Project 5 City Transit Phase 1 In **Glasgow**, the main priorities (in addition to 4 above) are likely to be improved capacity and frequency on the two east-west city tunnels plus expansion of the bus hub already proposed just south of Argyle St into a bus/rail hub including increased frequency on South Side lines and from Bellgove to the east. In **Edinburgh**, the tram could be extended to Leith with increased frequency and fewer buses on Princes St together with improved capacity through Waverley on Lothian and south Fife services. In **Aberdeen**, with track to Dyce and Inverurie due to be doubled before 2020 and more housing north from Aberdeen, NESTRANS is already studying reopening of rail services to Ellon via Dyce. The trackbed remains available, easing the cost of restored services (see Appendix 1)

		Miles
4.8 Total New Construction involved in Projects 1 to 5	1	14 or 21* depending on option chosen
	2	18
	3	8
	4	1 # + 2 miles on existing track
	5	17
	TOTAL	58 or 65

5 Potential Longer-term Projects

5.1 Preferred Longer term Options 6 HS2 Scotland Phase 2 & Edinburgh Airport

7 Strathmore route and Cowdenbeath-Perth direct

8 Ellon-Peterhead/Fraserburgh

9 Phase 2 : City Transit – Glasgow, Edinburgh, Aberdeen (Appendix 1)

Other Options for Evaluation

10 Hawick-Gretna

11 Access to Ayrshire and Cairnryan port

12 Newtonmore-Tulloch

13 Access to the Far North

5.2a Project 6 HS2 Phase 2 and Edinburgh Airport Depending on outcomes from Phase 1, HSR plans could either be scaled down or varied to include longer sections of new route, direct access to Edinburgh Airport (and onwards to Aberdeen/Inverness) and improved access from Edinburgh to Dumfries. Firmer proposals are expected in the Scottish/UK government report on Anglo-Scottish HS2 expected in February. With respect to Edinburgh Airport and the approach to Haymarket, the NR 'Route Study' revives the plan for a grade separated Almond chord from the Linlithgow line to give direct access to Edinburgh Gateway (opening in 2016) and a shorter tram trip into the airport than that presently available from Edinburgh Park. This would be linked with quadruple tracking to Saughton Junction and a reduction in conflicting paths between Saughton and Waverley.

5.2b An alternative suggestion for appraisal is retention of Gateway-Saughton quadrupling but replacement of the Almond chord with direct access from the Carstairs, Shotts, Bathgate and Linlithgow lines to an Edinburgh Airport station close to the present Ingliston park and ride tram stop with related curves to join the Fife line into Edinburgh and to join the Fife line northwards along with a high quality, short distance automated shuttle into the airport terminals. Among other benefits, this would allow a new service to be introduced from Glasgow Central to Dundee via Motherwell, Edinburgh Airport and Fife.

5.2c With respect to HS2 after 2030, decisions will be influenced by whether the long-term Glasgow terminal should be at the present Central station or in the High St area (with links to cross-Glasgow services) (also mentioned in NR 'Route Study'). Further line improvement could be made south from Law together with direct access from the Edinburgh route to the WCML at Carstairs (replacing the present severe curves) together with investigation of new route from the upper Clyde Valley to join the Nithsdale route with this route:-

EITHER becoming the principal Anglo-Scottish high-speed route (including Dumfries and Gretna bypasses) but also bringing **Dumfries** within an hour of both Edinburgh and Glasgow (*at present, a bus or car trip to Lockerbie is required for a train connection to Edinburgh while the present Dumfries-Glasgow service via Kilmarnock takes almost 2 hours*). The present route via Beattock could become the principal freight route to and from the south but with an improved intermediate passenger service

OR adaptation of the Beattock route for high-speed trains with freight and a direct **Dumfries** passenger service utilising a new link from the upper Clyde to the Nithsdale route

5.3 Project 7 Strathmore route and Cowdenbeath-Perth direct These schemes have a linked value but involve high costs and environmental issues. Partly using former well-aligned track bed, the Strathmore route would run from south of Laurencekirk to Stanley Junction north of Perth. As well as having intermediate passenger services and providing an alternative to the limited clearance for freight via Dundee, this route could permit 45 minute non-stop Aberdeen-Perth passenger times with both Aberdeen and Inverness also gaining from a direct route from Bridge of Earn to Cowdenbeath cutting Edinburgh-Perth to 35 minutes rather than the 45 minutes on the route via Ladybank upgraded in the 2020s.

5.4 Project 8 Ellon-Peterhead/Fraserburgh On a parallel with reopening to Galashiels and Hawick, this scheme could restore rail passenger links from Aberdeen through to the main centres of Buchan. Further growth is desirable in this area but a difficulty is that the former line to Peterhead was circuitous though a more direct line from Ellon reached Boddam close to Peterhead. The most promising option may be a reconstruction of this route with new route into Peterhead, and possibly on to Fraserburgh. Like Hawick and Dumfries, this proposal would bring Peterhead within 45 minutes and Fraserburgh within 1 hour of the nearest city and related employment, educational, entertainment and health facilities.

5.5 Project 9 City Transit : Phase 2 (see Appendix 1 for further detail) In **Glasgow**, options should include additional rail crossings of the Clyde e.g. SECC-Ibrox and/or Scotstoun-Braehead with an extension via Renfrew to Glasgow Airport and new route into Newton Mearns and East Kilbride Town Centre. Some longer-distance services could also divert to the Argyle St hub (see 4.6), releasing extra capacity at Queen St HL and on the two east-west city centre tunnels. **Edinburgh** trams could extend further to the west and south-east, including the important corridor to and beyond Edinburgh Royal. **Aberdeen** could see extensions along Deeside and to other corridors being investigated by NESTRANS (see Appendix 1)

5.6 Due to the remit of Network Rail being confined to track owned, the NR 'Route Study' is unable to take account of all the complex issues of city region transport, land uses, air quality and the local environment. These issues rest more suitably with Transport Scotland and elements of devolution to city regions or restructured Regional Transport Partnerships. The suggestions in 5.5 (and in 4.7) assume an integrated approach going beyond the 'Route Study' parameters – though offering scope to enlarge capacity for longer-distance trains at city terminals by creating separate, adjacent capacity for local Metro or tram services and zero emission buses

5.7 Other Options for Evaluation At the present time Projects 10 to 13 appear much less robust than the other projects suggested. Depending on public and political views, none of these four projects may gain wide support. Other options may prove more attractive as programmes are revised. Some schemes may be approved due to their benefits for local economies and community wishes rather than by gains for the national economy.

5.8 They are suggested as 'wildcards' on the basis that the alternative may be partial or total closure of lightly used rural rail services (with non-congested and improved roads as an alternative) OR a shift to a community management focus lowering costs but raising local income through greater usage, more involvement in the tourist and leisure sector, modest reductions in travel times and, in some cases, scope to develop freight. It is significant that the NR 'Route Study' has few proposals for change on rural routes and states that Abellio ScotRail is being optimistic in forecasts of future usage – notably on the Stranraer line. The route north of Tain has similar problems and scenery less attractive than on the West Highland and Kyle lines.

5.9 Project 10 Hawick to Gretna This route could be reopened utilising substantial sections of former trackbed but with a south end deviation to connect with the West Coast Main Line at Gretna. There is potential for through scenic and leisure use between Edinburgh and Leeds via the Borders and the Carlisle and Settle line. However, long trip times compared to alternative routes south from Edinburgh and a low local population imply low passenger usage compared to the section of line north from Hawick. Though there is some potential for traffic in forest products, through freight is likely to be low compared to existing alternatives and the further possibilities of Projects 1 and 6 (HS2 Phases 1 & 2). This Project could be compared with alternatives such as reopening from St Boswells via Kelso to Tweedmouth or from Hawick via Kielder to join the Carlisle-Newcastle line near Chollerford.

5.10 Project 11 Access to Ayrshire and Cairnryan Port The main issue here is the future of the line south of Girvan. At present, Girvan and Ayr have two access routes to Glasgow, via Paisley and via Barrhead. To release capacity between Paisley and Glasgow and to provide shorter trip times from Glasgow to stations between Troon and Girvan, 2 of the present 4 trains per hour to Ayr could be diverted to run via Barrhead using a new section of route from Kilmaurs to Laigh Milton – cutting best Glasgow-Ayr times from 48 to 34 minutes with Girvan reached in 54 minutes. This would be aided by NR ‘Route Study’ proposals to extend electrification to the Kilmarnock line and onwards to Barassie. This electrification could be extended southwards to Ayr Hospital and Girvan.

5.11 With respect to the line beyond Girvan, the recent Scottish Parliament Transport Committee Report on freight has urged a greater shift to rail, including study of a reopened rail link from Stranraer to the expanded port for Northern Ireland at Cairnryan. However, wider issues arise. Beyond Girvan, a direct, though expensive, new line from Pinwherry to Cairnryan, could aid rail freight and also cut passenger times from Glasgow to 1 hour 20 minutes. As well as boosting passengers, this line would also encourage development of rail freight from Cairnryan across to a central Scotland freight hub and the port of Grangemouth. Some rail freight via England could be captured by utilising the present link from Ayr to Mauchline connecting with the Nithsdale route to England. This could be compared with the costs and benefits of previous proposals for a reopened direct line from Dumfries through Galloway and with an extension to Cairnryan. A critical issue is the extent to which the direct route south from Girvan could gain a significant share of passenger and freight traffic to and from Northern Ireland.

5.12 Project 12 Newtonmore-Tulloch This link from the upgraded Highland Main line would open-up access to Fort William, Lochaber and Mallaig with the bonus of added attraction for rising tourist and leisure use of the West Highland line over an extended season. Given plans to cut trip times on the Highland Main line, a link from Newtonmore could cut rail travel times from both Glasgow and Edinburgh to Fort William to 2 hours 10 minutes. Access to and from Aviemore, Perth, Dundee and Aberdeen would also be much improved with the added possibility of tourist attracting services from Oban to Inverness via the existing Rannoch Moor line and upper Speyside

5.13 Project 13 Far North Line A direct rail link from Tain to Golspie was first proposed 50 years ago as a means of safeguarding the line to Far North and facilitated by a joint road/rail design for the proposed Dornoch Firth Bridge. A joint design was not adopted and there were also fears that opening of the direct rail link could lead to closure of the loop through Lairg. The Far North Line continues to suffer from unreliability and lengthening trip times compared to coaches connecting directly with Orkney ferries. The line north of Tain may face closure in the 2020s unless trip times to Thurso can be reduced with good connections for Orkney. The NR ‘Route Study’ suggests a direct chord to Thurso at Georgemas Junction but trip times from Inverness are likely to stay above a desirable 2 hours 15 minutes unless plans for a direct Tain to Golspie rail link are revived together with other modest signalling and line improvements. Beyond 2040, prospects for a tunnel link to Orkney (seen as feasible by Norwegian experts) could enhance both passenger and freight usage on the Far North line but this would be a very expensive project compared to options elsewhere in Scotland.

5.14 Preferred Longer-term Options	Project	Miles	Wildcard Projects	Miles
	6	48	10	36
	7	56	11	20
* includes Peterhead-Fraserburgh	8	16 or 32*	12	24
	9	35	13	11
	TOTALS	155 or 171		91

5.15 Following the present consultations, the Scottish Government should publish a revised **Scottish Transport Strategy** by late 2016 followed in 2017 by revised transport programmes (subject to five-yearly review), including rail network extensions in conjunction with an updated National Planning Framework (NPF4) and related land safeguards

6 CONCLUSION

6.1 Under the pressure of tight funding constraints and shifts to priorities outside transport, the next 18 months offer a special opportunity to identify, and deliver, those changes in the rail network best suited to future requirements in coming decades. These should encourage the historical change of trend since 2000 to rail growth and stabilised car use, especially between, in and around cities. This offers a high contribution to the Scottish Government aims for a low carbon, well-connected and inclusive economy.

6.2 Due to funding, skill shortages and legal issues, the focus in the coming five years will be on providing more rolling stock and tackling capacity constraints and essential renewals on the existing rail network. But this also offers opportunity to plan now for an improved and extended network - and related land safeguards - for phased delivery in the 2020s and 2030s. The NR consultative '*Route Study*' to 2043 published in December is disappointing in giving little attention to network extensions making rail more accessible for a larger section of the population – especially as some extensions may provide better overall value than major trunk road improvements and some schemes within the existing rail network.

6.3 The finalised '*Route Study*', and subsequent government publications, should evaluate network extensions as well as improvements within the existing network

6.4 Due to the restricted remit of Network Rail (see 5.6), the NR '*Route Study*' proposals fall below what is required in a fuller review of city transit and related links to the economy, air quality and the local environment. Transport Scotland and restructured Regional Transport Partnerships or local authorities – notably around Glasgow, Edinburgh and Aberdeen should become more fully involved in plans and programmes to 2030 and 2040.

6.5 The Scottish Government should publish a revised Scottish Transport Strategy by late 2016 followed by detailed five-year programmes and a revised National Planning Framework in 2017

6.6 Alternative suggestions are put forward in this Discussion Paper for further evaluation. Views on these, or possible variations, are invited by email to thstsg@btinternet.com by **25 March 2016**. Network Rail has also invited comments on its '*Route Study*' by **10 March, 2016**. These should be sent to scotlandroutestudy@networkrail.co.uk

APPENDIX 1 City Transit

This Appendix deals with Glasgow, Edinburgh and Aberdeen. In other cities and larger towns, use of rail for local trips will remain much lower than walking, cycling and bus/DRT and car use. But Glasgow is already in a strong position not only for longer-distance rail commuting but also for rail trips under 15 miles. With several rail routes having underused capacity and linking well with land use strategy, there is potential for further growth aided by bus/rail co-ordination, shifts from car use and increased pressure for improved air quality and reduced road traffic volumes, especially in city centres. Edinburgh has similar opportunities from a lower base with Aberdeen City and Aberdeenshire Councils also looking at ways of creating rail rapid transit or busways on some local routes.

GLASGOW

Faced with **EITHER** shared use of some routes by both longer-distance and short-distance high-capacity Metro style trains **OR** a fully segregated Tram or Light Rail Network, the former is likely to be the more attractive option for the Glasgow conurbation in association with some further busways. (High costs relative to benefits rule out extension of the Subway Circle presently being modernised). Suggested priorities for a phased programme to 2040 are:-

- initial delivery of Metro style trains from 2020
- use of each of the east-west city centre tunnels by 16 to 20 trains per hour in each direction comprising a mix of City Metro and Regional services with half of services to or from the east starting or terminating at SECC
- further expansion of city centre capacity for City Metro services by two extra platforms at Central High Level and by making the planned bus hub in the east St Enoch area a combined City Metro and Bus hub for South Side services integrated with the present Argyle St station and options for services coming from Bellgrove and routes to the east and north
- outer terminals for City Metro services at Milngavie, Lennoxton, Croy, Cumbernauld, Airdrie, Motherwell, Hamilton, East Kilbride, Neilston, Barrhead, Kilmacolm, Bishopton, Glasgow Airport and Dumbarton
- land safeguards for city centre works, a Garngad chord, an extension to East Kilbride Town Centre/bus hub, into Newton Mearns, a Finnieston/Botanic Gardens/Hyndland route (mainly in abandoned tunnel) and for Clyde crossings at Finnieston and/or from Scotstoun to Braehead and onwards to Renfrew and Glasgow Airport

EDINBURGH

With the Princes St tram route already open and limited capacity at Waverley for additional local services, the most promising developments in Edinburgh are expansion of the tram network in conjunction with co-ordinated bus services and the location of most new housing close to tram routes.

Suggested aims of a phased programme could be:-

- 2020s - extension of the network east to Leith/Newhaven and west to Curriehill and to Newbridge
- 2030s - extensions on the Edinburgh Royal corridor linking to Musselburgh and to Eskbank/Penicuik
- completion of Northern loop from Haymarket to Granton and Newhaven

There may also be scope for Metro-style services on existing route from Dunfermline/Bathgate to Musselburgh/Wallyford and Newtongrange/Gorebridge with some of these services using an electrified South Suburban line as already planned for freight movement and emergency Waverley diversions

ABERDEEN

In addition to further improvement in services between Inverurie, Aberdeen and Stonehaven, the most promising post 2020 development could be a Metro service from Ellon via Dyce through central Aberdeen to Peterculter or Banchory (both using sections of former rail route and in areas with significant housing) along with an extension into the Aberdeen Airport Employment Zone. To safeguard such options, one practical issue is whether plans for a short section of single track to the immediate north of Aberdeen station should be amended to include restoration of double track between Aberdeen and Kittybrewster in addition to already approved doubling onwards to Inverurie. This point is noted in the NR 'Route Study' but with the conclusion that there is, as yet, no clear case for double track on the short tunnel section where retention of single track makes it cheaper to provide increased clearance for rail freight. Yet this section could have value for extra city transit on a new route being considered by NESTRANS from Westhill through central Aberdeen, splitting to serve the new port area and possible housing south of the River Dee .

APPENDIX 2 Wider Options for Rail Network Extensions 2000 - 2020

Paras. 2.1 and 2.2 indicate considerable progress on the five priorities in the 1999 Report with two open by 2015 , the first large section of Borders Rail also open and the other two projects continuing to attract political and economic interest. Three other projects rose in priority and were open by 2015 (2.3)

The more tentative **Projects 6 to 10** suggested for appraisal in 1999 are shown below. These were:-

- 6 Dumfries-Stranraer direct
- 7 Elvanfoot-Carronbridge
- 8 Balloch-Tarbet
- 9 Newtonmore-Tulloch
- 10 Tain-Dornoch-Golspie

These were always regarded as more problematical in a changing economic and social climate. Most have had weaker evidence of business and public support since 2000 though **Project 7** may attract greater attention as plans for Anglo-Scottish HS2 develop. This scheme could be a possible means of resolving tensions between freight and high-speed passenger movement on the Central Scotland-Carlisle-Lancashire-West Midlands-London west coast corridor (see Para 5.2a to 2c on Project 6 HS2 Phase 2 , 2030-40). Projects 6 and 8 have been deleted from the 2020-40 list of network extensions suggested for appraisal . Project 6 is replaced by Project 11 while Projects 9 and 10 in the 1999 Report are retained as 'wildcard' Projects 12 and 13