

## **Rail Travel in South East of Scotland**

### **1. Introduction**

- 1.1** This paper seeks to provide an update to the Board of current and future rail issues within the SEStran region.

### **2 Background**

- 2.1** Rail provides improved and additional connectivity in many - but not necessarily all - transport markets. The rail network can enable large volumes of people to be transported quickly into and between key urban centres in an environmentally sustainable way that benefits passengers and the wider public. It does so by enabling people to access employment, leisure and services in a way that is affordable for both passengers and funders. In markets such as these, rail is well-placed to become the mode of choice for many people.

- 2.2** In rural markets, where populations are smaller and more dispersed, rail can provide an important lifeline to the populations it serves. Rail services provide access to local services such as schools and hospitals, and often forms the core service that underpins the existence of a coherent public transport system in rural areas, which is key in terms of social inclusion. Transporting freight by rail not only supports sustainable economic growth, it is safer and greener than road transport.

- 2.3** Improving rail connectivity generally involves improving journey times and/or improving train service frequencies for passengers and freight. Connectivity can also be improved in other ways. Firstly, it can be improved by increasing the capacity of existing trains where on-train crowding exists. This ensures that the benefits of improved connectivity are enjoyed by as many people as possible rather than moving them onto other modes of transport. Secondly, improving the travelling environment improves the quality of the travelling experience and the overall value-for-money of the railway. Finally, improving the affordability of rail services enables more people to benefit from the connectivity that these services provide.

### **3 Network Rail Update**

- 3.1** The ability to run more and faster trains depends on the track and signalling capacity of the network and on the volume and type of services that already operate. The requirement for sufficient spacing between trains to ensure that safety and reliability are maintained is one constraint on capacity.

Another is the degree to which traffic is mixed: where there are significant differences in the speeds among trains sharing the same route (for instance between fast, long distance services and slower, stopping passenger services or freight services) the overall service frequency that can be provided will generally

be lower than when traffic operates at a uniform speed and to a uniform stopping pattern.

Therefore, in many instances where there are aspirations to improve services, trade-offs exist between the number of services that can be accommodated on the network, the mix of traffic that can be operated safely on the network and the quality of service that can be enjoyed for a given level of infrastructure capability (and therefore cost).

### 3.2 Electrification

Electrification can deliver reduced journey times by improving the rate at which rolling stock is able to reach line-speed. Regenerative braking can deliver environmental benefits by reducing energy cost, while the greater haulage capability of electric traction can reduce journey times for freight traffic, improving overall capacity on key routes. When combined with suitable signalling systems, electrification can often contribute significantly to improving the overall capacity of the network.

Within Scotland, electrification is currently centred on the core Glasgow commuter routes, the West Coast Main Line and the East Coast Main Line south and west of Edinburgh. The electrified network is being significantly expanded during Control Period 5, as a result of the Edinburgh-Glasgow Improvement Project (EGIP) and the Rolling Programme of Electrification. This will mean that all routes between Edinburgh and Glasgow will have been electrified by March 2019 in addition to those to Stirling, Dunblane and Alloa.

- 3.3 Further electrification of the network between Edinburgh and Perth/Dundee, including challenging structures such as the Forth Bridge, North Queensferry Tunnel, Kinghorn Tunnel and the Tay Bridge. Independently Powered Electric Multiple Unit (IPEMU) / bi-mode could be considered once further development work has been undertaken, as an option to reduce the scope and cost of route clearance works.

### 4. Key Interventions in the SEStran region

- 4.1 Network Rail have identified the following Key Interventions in the SEStran region that form part of their strategic plan up to 2043.
- 4.2 **Fife Bypass Line** - Scottish Government aspirations are for faster train services between Edinburgh and Aberdeen / Inverness. Providing an additional route through Fife will create the opportunity to timetable the stopping/freight and limited stop services on separate lines, thereby creating additional capacity and offering the ability to reduce journey times by approximately 5-10 minutes (depending on stopping patterns).
- 4.3 **Winchburgh Junction grade separation + Almond Junction** - This option proposes the grade separation of Winchburgh Junction and the creation of a chord line and grade separated junction at Almond to connect the main

Edinburgh –Glasgow and Fife lines running to/from Edinburgh. The new junctions and section of line between Winchburgh and Haymarket would be electrified.

- 4.4 Edinburgh Waverley Enhancement** - To facilitate more and longer local and Anglo Scottish services. Creation of a mezzanine level for safe and easy station navigation and relocated retail/passenger facilities to allow more platform capacity for trains.
- 4.5 Edinburgh Suburban Line Enhancements** - Remodelling of Portobello, Slateford and Niddrie West single lead junctions, upgrade of the signalling capacity, enhancement of the Millerhill through route capabilities (from Monktonhall Junction) in addition to electrification.
- 4.6 Additional Infrastructure on East Coast Main Line** - Capacity enhancement between Abbeyhill Junction and Portobello Junction to enable trains to run closer together (linked to the remodelling of Edinburgh Waverley East throat and Edinburgh Suburban Line Enhancement Programme)
  - 4-tracking between Prestonpans and Drem (including Prestonpans, Longniddry and Drem Stations)
  - Longer loops or dynamic loops in the Grantshouse area (scope dependant on the capacity enhancements achievable at the east end of the corridor).

## **5. Scotrail Update**

- 5.1** SEStran met with Scot Prentice from Scotrail in January 2018. Key question for Scotrail - How do they make best use of improved infrastructure and £475m investment in new and enhanced trains and provide capacity for long term? They aim to do this by:
  - Providing the “right” service for each travel market rather than make one train do everything
  - Connect communities with their nearest city – this is how most journeys are done.
  - Ensure the majority of stations have a minimum of an hourly service all day
  - Introduce very limited stop city to city services to reduce journey times and enable bespoke customer service for this travel market
  - Introduce 96 new trains - 70 Hitachi class 385 electric trains and 26 high speed, primarily on central belt routes which will benefit SEStran region. Timing delayed due to supplier issues.

## **6. High Speed 2 Update**

- 6.1** HS2 will accommodate a step change in capability for Anglo Scottish routes, but its outputs and timescales are still in development. SEStran attended the recent High-Speed Rail Stakeholders meeting in February 2018 and received an update from Transport Scotland and HS2.
- 6.2** It was confirmed that the project was proceeding with tenders for rolling stock and locations for production facilities being invited.

- 6.3** Aim for under 3-hour journey times by 2043 between London and Edinburgh/Glasgow with an interim aim of 3.30-hour journey times by 2030. However to meet these journey times integrating the HS2 routes will require management of potential capacity issues with the existing routes and timetables. This was highlighted as a significant issue to be addressed.
- 6.4** Transport Scotland are in the process of procuring a Consultant to undertake an Engineering Feasibility study, this study will examine two of the potentially better performing options (on the West Coast - Carstairs to Rutherglen, and on the East Coast - Newcastle to Dunbar) to understand cost, benefits, environmental impacts and technical considerations for work in Scotland that could improve journey times between central Scotland and London towards

The Contract has been awarded to Arup in March 2018. Please see following link for full details of the Award:

[https://www.publiccontractsscotland.gov.uk/search/show/search\\_view.aspx?ID=MAR312316](https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=MAR312316)

- 6.5** The current published HS2 business case also assumes that from 2026 HS2 trains will be 200 metres in length. From 2033 they will be 400 metres in length and it is proposed to split and join them in the vicinity of Carstairs Junction. This will allow a 200-metre-long train to operate to Edinburgh Waverley and a further 200-metre-long train to Glasgow Central. If splitting and joining does not take place at Carstairs, or any other location, then Edinburgh Waverley and Glasgow Central would have to accommodate 400-metre-long trains. There would be a significant impact on capacity for both stations and would necessitate major investment, with consideration of options including a new station in Glasgow and the implications for redevelopment of Edinburgh Waverley. It was highlighted at the February meeting that 400m trains would be the most effective from a cost benefit perspective and improvements to network capacity.
- 6.6** It was also confirmed that HS2 development should ensure that routes on both the East and West coast need to be delivered, ideally at the same time.

## **7. Key SEStran Regional Issues**

### **7.1 Levenmouth**

The out-of-use Levenmouth line has no blockages, is owned by Network Rail and has an operational junction with Edinburgh to Dundee the main line - the cost per mile of reinstating this line would be potentially significantly less than other rail re-openings, i.e. the Borders Rail extension. Benefits include:

- Economic regeneration
- Increased land value
- Improving lives of local population

The outline proposal is for a reinstated line with two new stations at Cameron Bridge and Leven served by a half-hourly passenger train service and with an intermodal freight terminal at Cameron Bridge.

A detailed infrastructure specification is required. This needs to be derived from a study to determine the optimum timetable for Fife passenger trains services with a re-opened Levenmouth line. This would determine, for example, the signalling required, where a passing loop should be located on the re-opened line and would assess the need for additional rolling stock. Only after such a study can a detailed estimate of capital and operating costs be made to finalise the required business case.

Previous studies (2008 & 2015) have concluded that the number of additional rail journeys generated would be in the region of 160,000 per year. There is also estimated to be an intermodal switch from bus and car to rail.

Next steps include proposals for a more detailed Single Option study this would be relatively expensive and would need to be funded by Transport Scotland.

## **7.2 Newburgh**

SYSTRA feasibility study was produced jointly with SEStran & Tactran for Newburgh and Oudenarde stations in 2015. The study was supported by both Fife and Perth & Kinross Council. Further investigation in the form of a full STAG appraisal is estimated to cost in excess of £100,000. Although representatives of the wider rail industry and Transport Scotland have been involved in discussions on a potential new station, there is little appetite to take a station proposal forward at this time, due to Network Rails concerns about impact on inter-city journey times. Transport Scotland and the Minister have indicated that any further consideration should form part of the broader NTS2 planning process.

## **7.3 Reston - East Linton – Dunbar**

Joint funding has been secured by East Lothian & Scottish Borders Councils and Scottish Government to fund the development. There has been agreement that work to deliver the stations will be undertaken with a timeline for opening at some point in the next Network Rail Control Period - CP6 (2019 -2024). The work will be undertaken in conjunction with wider work to expand capacity on the East Coast mainline.

Dunbar Platform Two - Network Rail have also announced their plans to construct a second platform at Dunbar station, which will commence work in 2019. The new platform will facilitate operation of the new Virgin Trains East Coast 'Azuma' trains, which will enter service in 2018, and will also allow for extra services to use the station.

## **7.4 Winchburgh Station**

Following the development of a business case for the new rail station and ongoing dialogue between the Winchburgh developers, Network Rail, Transport Scotland,

SEStran and West Lothian Council, an agreement was signed between Winchburgh Developments Ltd, the developer of the Winchburgh area, and Network Rail in 2014 to deliver a road bridge over the Edinburgh-Glasgow railway. Contained within this agreement was the delivery detail which would allow a new station to be funded and constructed once the granting of a station was given by Transport Scotland.

An Invitation to Tender (ITT) for the ScotRail franchise was issued in early 2014 by Transport Scotland. The ITT comprised the requirement on bidders to include a priced option of incorporating a Winchburgh rail station into the Edinburgh – Stirling / Dunblane / Alloa (following the electrification of this service in 2018 or 2019), as well as managing the new station.

The winning franchisee, Abellio, presented a priced option for a new station at Winchburgh in accordance with the ITT. The delivery of a rail station at Winchburgh has been agreed by all parties involved.

Network Rail are to provide further information to Scotrail to allow testing of possible timetable options to see what services are best to call there (2 options – the “new” fast Dunblane – Edinburgh service or the new service via Cumbernauld and Falkirk Grahamston). This is being delayed by a huge backlog of work in NR at the moment and unfortunately the other issues are more pressing because they affect timetables this year.

The Developer is in discussions with Network Rail regarding construction of a new road bridge over the railway – this is needed irrespective of the station. Current timeline projections are 2020 for construction of this. Potential opening of station is estimated as 2021.

## **7.5 Edinburgh Glasgow Improvement Program – Waverly Station Platform Extension**

To accommodate longer trains being introduced on both the Edinburgh to Glasgow via Falkirk (E&G) route and the East Coast Main Line (ECML) key platforms at Edinburgh Waverly need to be extended.

There are two programmes underway to enable the introduction of these longer trains, the Edinburgh Glasgow Improvement Programme (EGIP) and the Intercity Express Programme (IEP)

This project is about creating platforms of suitable length to facilitate the safe operation of longer trains, improving the capacity of the route as well as journey times

The work will deliver the following improvements at Edinburgh Waverly:

- Extensions to platforms 5 & 6 are required to accommodate 10-car IEP services on East Coast routes (extended to 275m)



- Extension to platform 12 to accommodate 8 car services on Edinburgh to Glasgow line via Falkirk High (extended to 204m)
- In addition to the platform extensions, there will be work on the tracks to increase flexibility on approaches to the station from the east
- A crossover between platforms 10 and 11 will be installed which improves operational flexibility at the station

Due to issues with the collapse of Carillion, a key contractor on the project, work has been halted. However, Network Rail is expecting to have new arrangements in place and work to be restarted with an aim to have the east end works completed by end 2018.

## **7.6 Borders Railway**

SEStran with SBC contributed to the current Transport Scotland Pre-Appraisal study looking at how the Scottish Borders is served by the strategic transport network. The focus of the study is on how the transport network connects the Scottish Borders to the key markets of Edinburgh, Newcastle and Carlisle, it will identify where the network works well, look at issues and seek suggestions for improvement.

This study will consider the future transport needs of the Scottish Borders and cross border connections, including examining the case for extending the Borders Railway.

As set out in the 2017-17 Programme for Government (PfG), the Strategic Transport Projects Review (STPR) will be reviewed, in alignment with National Planning Framework (NPF4) to enable a comprehensive review of national transport infrastructure priorities. The findings from this Pre-Appraisal work will feed in to this review and enable the Borders area's problems and opportunities to be clearly articulated for consideration at the national level.

The project will be completed with the full report published in Spring 2018.

## **8 Accessibility**

- 8.1** The Thistle Assistance Card is supported by all train operators in the region with Caledonian Sleeper now on board with the scheme and promoting the card and App.

## **9. Recommendations**

- 9.1** It is requested that the Board not the contents of this report.

Keith Fiskin  
**Business Partner**  
9<sup>th</sup> March 2018



**Partnership Board Meeting  
Friday 16<sup>th</sup> March 2018  
Item 12. Regional Rail Update Report**

Policy Implications	None
Financial Implications	None
Equalities Implications	None
Climate Change Implications	None