Strategic Transport Forum

19th June 2020

Agenda Item 7: Passenger Rail Study

Recommendation:

It is recommended that the Forum:

a) **Notes the completion of the Passenger Rail Study (Phase 1)**

b) **Considers and agree, subject to any final amendments, the Passenger Rail Study (Appendix 2)**

c) **Considers the recommendations of the Passenger Rail Study, including the areas for improved levels of connectivity, identified for further work in Phase 2 of the Passenger Rail Study.**

1. Overview

1.1. To date, the success of the Heartland has been without the levels of investment in infrastructure and services needed to ensure growth is sustainable in the long term. If the Heartland is to realise its economic potential, in a way that reduces the environmental impact of transport, then the rail system is going to play an essential role.

1.2. In response, during its meeting in November 2019, officers appointed Network Rail to lead on the EEH Passenger Rail Study. Forum members were updated on the study's progress at its meeting in January 2020.

1.3. This decision to appoint Network Rail as the technical lead is indicative of the strong working partnership that has developed between Network Rail and the EEH Business Unit. This relationship is helping to identify and develop regional rail priorities that bring together the technical and political support for future rail interventions.

2. Strategic Approach

2.1. Officers agreed that the Rail Study would be delivered in two phases, accompanied by two separate reports.

2.2. The aim of Phase 1 is to conduct a baseline assessment and review of the Heartland's rail network and levels of service. By baselining the current rail offering, it has provided an evidence-led assessment of the existing rail infrastructure, helping to reveal where strategic connectivity gaps exist. These gaps are measured by generalised journey times/speeds and levels of decarbonised-non-decarbonised services.

2.3. The Phase 1 report is a culmination of technical work that began following the study's inception meeting on the 27th November 2019. The report has been compiled by Network Rail System Operator, North West and Central team in conjunction with EEH and steering group members representing the Rail Delivery Group, East West Railway Company and seven local authority partners. The Steering Group will have an on-going role in overseeing Phase 2. An invitation has been extended to colleagues from the Department for Transport to join the Steering Group moving forward.

2.4. The Phase 1 baselining process is recognised as the first key step in developing a plan for the region's rail network. It has secured buy-in from all partners following the Officer Group meeting on 5th June 2020 and is endorsed technically by Network Rail in its role as infrastructure owner and operator. Phase 1 creates the basis from which conditional outputs will be developed. It also serves as a starting point for Continuous Modular Strategic Planning and discreet work streams that will emerge following Phase 2.

2.5. Forum members are advised that the conclusions drawn from the Phase 1 report will initiate the process of Phase 2, which will identify conditional outputs along respective corridors. These conditional outputs will provide a set of target service outcomes without consideration being given to feasibility, deliverability or the adoption of specific routes for new infrastructure that may need to be provided.

2.6. The flowchart below indicates the relationship between the two phases of the Rail Study:

3. Methodology

3.1. A list of 45 key regional nodes, 29 internal and 16 external, to the Heartland's boundary were established in Section 2. These were identified due to their role as conduits of high volumes of passengers, interchange potential, locations for planned economic and housing growth and role in delivering partners local aspirations.

3.2. In Section 3, generalised journey time (GJT) from London terminus to key nodes along the seven mainlines were analysed and presented. Ten representative locations were selected as a case study for GJT analysis and compared with length of journey by car. GJT and generalised journey speed (GJS) measured the indicative time it takes to travel from a single node to 44 others respectively and outputs are displayed as maps. The impact of East West Rail on current level of connectivity was also considered.

3.3. Having obtained empirical GJT and GJS data and analysed the levels of service accordingly, Section 4 draws out common connectivity themes and specific corridors that experience poor connectivity.

3.4. Corridors that were identified as requiring improved levels of rail provision are considered alongside relevant railway enhancements either in development or delivery stages, the impact of High Speed 2 and knowledge of the number of decarbonised services and sections of electrified rail network (Sections 5-7).

4. General Findings

4.1. The analysis of the Heartland's rail network has confirmed that passengers generally experience good levels of rail connectivity when making journeys across a single main line. Each main line is typically served by fast and frequent services that connect important towns and cities directly into London, enabling passengers to travel easily to and from destinations along each arterial route.

4.2. Challenges emerge when passengers have to make journeys across the Heartland that involve moving from one main line to another. The interchange penalties involved erode journey times which subsequently make journeys by car more attractive. Many of these journeys require interchange via Zone 1 of London, an already congested part of the rail network.

4.3. This common journey pattern has confirmed that the rail network within the Heartland lacks cross connectivity. This is especially true for many airports, which for most of the region relies on awkward interchanges via the capital, adding unwelcome uncertainty to a critical journey.

4.4. Whilst there are schemes in the pipeline designed to address some of these gaps, delivery of East West Rail is not in itself a silver bullet. A key point highlighted in many case studies has shown that whilst there will be a very strong core linking Oxford and Cambridge, the required interchanges, often multiple, to reach destinations beyond this core will be a barrier in encouraging more journeys by rail. The need for two interchanges exists for nearly all journey pairs that don't start and end on the core route, such is the need to maximise this schemes potential by having it operate beyond its current remit.

4.5. Although most of the Heartland's rail network is electrified, the opportunity exists to use East West Rail as a catalyst for electrification of the rest of the network. By addressing some of the main gaps where diesel operates such as Didcot and Oxford through to Banbury and the Leicester to Ipswich route via Peterborough and Ely, a case could be made to electrify the East West Mainline and by doing so create a continuous electrified corridor to the benefit of freight, passengers and the environment.

4.6. Finally, the need to utilise released capacity on the classic network resulting from the delivery of HS2 is significant. This presents an opportunity to recast the timetable in such way that improves GJT on the West Coast Main Line (following Phase 1/2A) and Midland Main Line and East Coast Main Line respectively (following Phase 2B).

5. Areas of focus

5.1. The Phase 1 baseline analysis has identified ten areas of focus. These are a mixture of existing rail corridors where direct services are non-existent or infrequent, or corridors where there is currently no rail infrastructure to support a journey.

5.2. A southern, northern and extended central arc concept is proposed where in the most part the three 'Arcs' do not currently have a rail corridor operating along them. In addition, seven other corridors have been identified for further economic analysis where journey times along existing railway is noticeably poor.

5.3. Subsequent areas of focus for improved levels of connectivity in Phase 2 are:

- **Northern Arc:** A corridor linking North Oxfordshire with Northamptonshire and on to Peterborough.
- **Central Arc:** Linking Swindon and Reading through Oxford to Cambridge, Ipswich and Norwich via Milton Keynes and Bedford, overlapping with the East West Rail corridor.
- **Southern Arc**: linking the southern edge of the Heartland north of the M25 corridor and connecting Buckinghamshire through southern Hertfordshire.
- **Corridor 1-Oxfordshire and Swindon:** Cross Oxfordshire links and improvements to Swindon.
- **Corridor 2-Chiltern Mainline:** The area covered by the two routes from London Marylebone by improving connectivity between intermediate stations on the route and towards Oxford, Banbury and the West Midlands.
- **Corridor 3-East Midlands-Thames Valley:** Linking Old Oak Common through the Chilterns to Aylesbury, Milton Keynes, and Northampton towards the East Midlands.
- **Corridor 4-Milton Keynes and Peterborough:** Two of the biggest economies and growth in the region are not linked by direct services.

- **Corridor 5-East Hertfordshire-Cambridgeshire:** Improving the connectivity between the towns on the West Anglia and East Coast Main Lines to Cambridge.
- **Corridor 6-Peterborough-Cambridge-Stansted Airport:** Improving upon the hourly service that links these three key employment, leisure and housing centres.
- **Corridor 7-Peterborough-East Midlands-West Midlands:** Improving upon the hourly service that links Peterborough with Leicester and Birmingham.

5.4. Appendix 1 shows a map of the corridors proposed for further analysis in Phase 2.

5.5. These corridors are being used to inform the economic analysis in Phase 2 due to be carried out by Network Rail System Operator. Phase 2, to be undertaken this calendar year, will look at the monetary benefits of improving connectivity to specific nodes along these corridors: improvements are defined by enhancements to journey time or frequency.

5.6. Forum Members will be mindful of the wider EEH programme of connectivity studies, which form a key part of the Transport Strategy investment pipeline. The majority of corridors identified in the Passenger Rail Study are within the same corridors as those identified and prioritised for a Connectivity Study. In these situations we will align activity on rail with the work to be taken forward as a connectivity study thereby ensuring a truly multimodal approach. Where Passenger Rail corridors are not obviously linked to a connectivity study further economic analysis will be undertaken separately to understand the value of improving connections along those corridors.

5.7. The Passenger Rail Study (Phase 1) will be published as part of a suite of technical documents that supports the region's Transport Strategy.

Antony Swift
Project Lead
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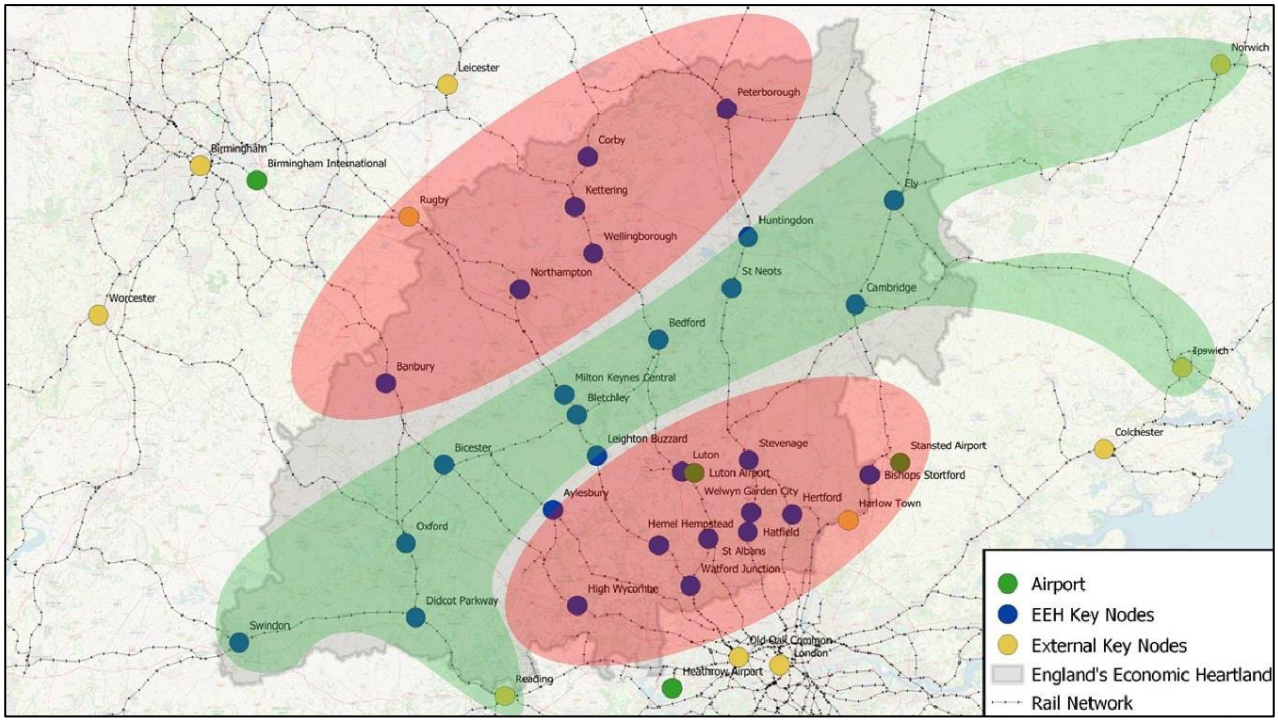
Appendix 1

Southern, northern and extended central arc concept



Corridors of poor connectivity