



Department
for Transport

Crewe Hub Consultation

Moving Britain Ahead

July 2017

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Foreword



Today marks an important step forward for High Speed Two (HS2). We have reached the award of stage 1 of the main civil engineering contracts for the route from London to the West Midlands (Phase One). We have deposited the next hybrid Bill in Parliament seeking powers to build the route from the West Midlands to Crewe (Phase 2a). And we have confirmed the remainder of the route, from Crewe to Manchester and from the West Midlands to Leeds (Phase 2b).

Today I am also asking for views on options to take forward a Crewe Hub. As a key rail gateway, providing 360 degree connectivity to major destinations and regions and a critical role for freight, Crewe will already benefit from HS2. Today I am setting out options which could give Crewe and the surrounding region even better access to high speed services, serving even more destinations.

Britain pioneered the railway in the 19th century. It is a testament to the vision of the Victorian innovators who went before us that we still use the network they established today. But we cannot rest on their legacy when our railways are ageing and, as passengers will know, face overcrowding and capacity problems.

Crewe is one such example, opening in 1837 to link the four largest cities in England. Despite continuing to act as a key gateway, Network Rail advises that the station and associated infrastructure is a major constraint on the network. The signalling needed to keep the network moving, requires updating. When the station was last remodelled in the 1980s rail operations were very different. Demand for services was in decline.

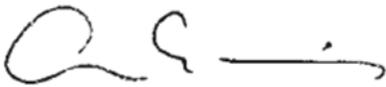
Network Rail and HS2 Ltd have been looking at what investment is needed for more HS2 services to stop at Crewe, address these existing constraints and accommodate future growth. This work is ongoing. Your views are an important part of taking this work forward.

A Crewe Hub could generate significant opportunities – not only for Crewe itself, but also for the surrounding sub-region. A hub at Crewe would involve national and local Government working together. I welcome the progress being made by Cheshire East

Council and the Constellation Partnership in identifying how they could invest in the scheme to ensure the benefits are fully realised.

HS2 will become the new backbone of our national rail network. It will increase capacity on our congested railways and improve connections between our biggest cities and regions. It will support our Industrial Strategy, generating jobs, skills and economic growth to help us build an economy that works for all.

I continue to support the vision for a Crewe Hub as part of this network and this consultation marks an important step in taking this forward.

A handwritten signature in black ink, appearing to read 'Chris Grayling', with a long horizontal stroke extending to the right.

The Rt Hon Chris Grayling MP
Secretary of State for Transport

Introduction

- 1 This consultation document on options for taking forward a Crewe Hub has been produced by the Department for Transport (DfT). It seeks views to inform the ongoing work to develop plans for a Crewe Hub and the business cases that would be required to take this forward.
- 2 In this document we set out infrastructure options for enabling more HS2 services to serve Crewe and potentially other destinations, the benefits that could be realised and the associated infrastructure that may be required. We also set out the importance of the local area's contribution and work they are undertaking to realise their ambitions for an improved station and wider growth aspirations.
- 3 The consultation asks for views on:
 - a. The vision for a hub station at Crewe, as recommended by Sir David Higgins in 2014, and set out in paragraphs 3.3 - 3.7
 - b. Providing 400m platforms at Crewe station in 2027 which could enable longer HS2 trains to and from London to split and join at Crewe, meaning other destinations, such as Stoke-on-Trent, could be served by a high speed service, as set out in paragraphs 5.8 - 5.18
 - c. Providing a junction north of Crewe station to connect the West Coast Main Line (WCML) and the high-speed line, in 2033 as part of HS2 Phase 2b. This could enable northbound high speed connectivity from Crewe, providing more seats between Crewe and London, as set out in paragraphs 5.19 - 5.28
 - d. Levels of future freight growth that should be considered in planning a Crewe Hub
 - e. Levels of growth in local and regional passenger services that should be considered in planning a Crewe Hub
 - f. The role the local area could play in realising a Crewe Hub, including by way of local funding contributions and evidence for potential levels of growth
- 4 The options set out in the consultation are focused on the infrastructure that could change HS2 services, enabling us to consider any potential changes alongside the passage of the HS2 Phase 2a hybrid Bill through Parliament.

- 5 Proposals for a Crewe Hub are additional to the core HS2 scheme and any future decisions on whether to take forward proposals for a Hub will be subject to affordability (including the scale of any local contribution to costs) and value for money.
- 6 Building on the already excellent existing links at Crewe, a Crewe Hub could generate significant opportunities – not only for Crewe itself but also for the surrounding sub-region. The Constellation Partnership¹ positions Crewe at the heart of a locally driven programme of investment to bring jobs, housing, growth and regeneration to Cheshire and North Staffordshire.
- 7 The local area has an important part to play to ensure the benefits of any future rail investment are fully realised. Cheshire East Council are currently looking at funding models which could generate investment to improve existing station entrances with better passenger access and relationships with the surrounding local road network and car parks.
- 8 This consultation also seeks views on the potential for third party contributions to the proposals outlined in this document, with a particular focus on the option for a junction north of Crewe station. As Crewe is also in Transport for the North's (TfN's) area of interest, we would be interested in hearing how a Crewe Hub fits with their wider priorities for strategic transport improvements for the North.
- 9 The consultation, which runs from 17 July 2017-12 October 2017 seeks the views of local authorities, Local Enterprise Partnerships, the Devolved Administrations and the rail industry as well as passengers, businesses, communities and other organisations.
- 10 Your response to this consultation will help inform ongoing development of options for a Crewe Hub and future decisions about whether to take this forward, and if so, what legislation may be required.
- 11 Following this consultation, we will publish a report summarising stakeholder views on the questions posed in the consultation. We will not reply individually to every consultation response.
- 12 The Government expects to take decisions about taking forward a Crewe Hub as part of the normal rail investment cycle and the development of HS2 Phase Two. We expect to announce whether HS2 services to Stoke-on-Trent will be included in the Outline Business Case in 2019.
- 13 In November 2016 the Government announced a new rail franchise, the West Coast Partnership, to combine the current InterCity West Coast services with the development and introduction of High Speed 2 services. The West Coast Partnership franchisee will work with Network Rail, HS2 Ltd, other rail operators and wider stakeholders in a consultative manner to develop options for train services on the West Coast Main Line and HS2. These will include those options highlighted in this document, such as HS2 services to Stoke-on-Trent.

¹ Formerly known as the Northern Gateway Development Zone until it was renamed in March 2017, this is a collaboration between seven local authorities and two Local Enterprise Partnerships. These are Cheshire and Warrington Local Enterprise Partnership; Stoke-on-Trent and Staffordshire Local Enterprise Partnership; Cheshire East Council; Cheshire West and Chester Council; Newcastle-under-Lyme Borough Council; Stafford Borough Council; Staffordshire County Council; Staffordshire Moorlands District Council; and, Stoke-on-Trent City Council.

Executive summary and questions for consultation

- 14 Railway infrastructure needs have changed significantly since Crewe station was last remodelled in the 1980s. With growing demands on the railway, and the need to improve wider capability, work will be required to ensure future demands can be met.
- 15 In supporting the vision for a hub station at Crewe, as set out by Sir David Higgins, the Government has three specific areas of consideration in terms of HS2:
 - a. Whether to provide 400m platforms, giving the ability to split and join HS2 trains
 - b. Whether to provide for a junction north of Crewe between the West Coast Main Line (WCML) and the high speed line as part of Phase 2b to enable services running on HS2 north of Crewe to stop at Crewe station. This could allow high speed connectivity to Manchester, Birmingham and Scotland in 2033 from Crewe. Such a junction would most likely be located near the site of the confirmed proposal to locate a rolling stock depot, north of Crewe, between Crewe and Winsford². If proposals for a junction were to be taken forward, we recognise that a separate consultation would be required on the proposal
 - c. Whether there is more that we can do with the infrastructure and signalling at Crewe to enhance flexibility for future operators providing HS2 services
- 16 Preliminary assessments of the benefits from (a) and (b) are shown in chapter 5. The results are based on indicative journey time estimates, which are subject to change once full feasibility testing of any services via these routes has been undertaken. Network Rail continues to work closely with HS2 Ltd and DfT to assess options to be considered for (c).
- 17 To support the development and assessment of business cases for Crewe Hub options, we are inviting responses to the following questions:

² As set out in High Speed Two Phase 2b: Crewe to Manchester, West Midlands to Leeds and beyond: Phase 2b route decision <https://www.gov.uk/government/consultations/hs2-crewe-to-manchester-west-midlands-to-leeds-route-refinement-consultation-2016>

Crewe Hub vision

Question 1

- a. Do you support the vision for a hub station at Crewe as suggested by Sir David Higgins, as set out at paragraphs 3.3 - 3.7? Please indicate whether or not you support this vision and provide full reasons to support your response.

Option for splitting and joining HS2 services

Question 2

- a. Do you support the concept of splitting and joining HS2 trains at Crewe, which could provide more seats from Crewe - London and also allow a HS2 service to Stoke-on-Trent as set out at paragraph 5.8 - 5.14? Please indicate whether or not you support this concept and provide full reasons to support your response.
- b. Please provide any evidence you can about the difference it would make to:
 - (i) local economic growth
 - (ii) housing provision

Opportunities for serving additional destinations north of Crewe

Question 3

- a. Which additional destinations north of Crewe might be served through splitting and joining trains at Crewe, as set out at paragraph 5.15 - 5.18?
- b. Please provide any evidence you have about the impact serving additional destinations would have on:
 - (i) local economic growth
 - (ii) housing provision

Option for stopping more HS2 services

Question 4

- a. Do you support the concept of stopping more HS2 services at Crewe, as set out in chapter 5? Please indicate whether or not you support this concept and provide full reasons to support your response.
- b. Please indicate your views on the potential service pattern(s) outlined in this document.
- c. Please provide any evidence you can about the difference stopping more HS2 services at Crewe would make to:
 - (i) local economic growth

- (ii) housing provision

Option for a new junction north of Crewe

Question 5

- a. Do you support the principle of a junction north of Crewe station which could allow HS2 services from Crewe to Manchester, Birmingham and Scotland, as set out at paragraph 5.19 - 5.28? Please indicate whether or not you support this principle and provide full reasons to support your response.
- b. Please provide any evidence you can about the difference a junction north of Crewe station would make to:
 - (i) local economic growth
 - (ii) housing provision

Freight

Question 6

- a. What are your views on the level of freight growth that should be considered in planning a Crewe Hub? Please provide full reasons and any evidence you can to support your response.
- b. What are your views on the relative future priorities of types of freight movements? Please provide full reasons and any evidence you can to support your response.

Local and regional passenger services

Question 7

- a. What are your views on future local and regional passenger services that should be considered in planning a Crewe Hub? Please provide full reasons and any evidence you can to support your response.

Local funding contribution

Question 8

- a. What do you see as the potential for a local funding contribution to any of these interventions alongside complementary works, such as improving the existing station buildings and road access?

Additional areas

Question 9

- a. If there are any additional areas that you think it is important for us to consider, that have not already been addressed in this consultation, please explain them here.

How to respond

The consultation period began on 17th July 2017 and will close on 12 October 2017 at 23:45. Please ensure that your response reaches us before the closing date. If you would like further copies of this consultation document, it can be found at <https://www.gov.uk/dft#consultations> or you can make a request using the contact details below, if you need alternative formats (Braille, audio CD, etc.).

Please respond to this consultation using one of the methods below:

Online

<https://www.gov.uk/dft#consultations>

By email

crewehub@dft.gsi.gov.uk

By post

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For more information please visit <https://www.gov.uk/dft#consultations> or call (24/7) 08081 434 434 / Minicom 08081 456 472.

When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of a larger organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the Freedom of Information Act 2000 (FOIA) or the Environmental Information Regulations 2004.

If you want information that you provide to be treated as confidential, please be aware that, under the FOIA, there is a statutory Code of Practice with which public authorities must comply and which deals, amongst other things, with obligations of confidence.

In view of this it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information, we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department.

The Department will process your personal data in accordance with the Data Protection Act (DPA) and in the majority of circumstances this will mean that your personal data will not be disclosed to third parties.

1. Crewe station today

- 1.1 Located 160 miles north of London and 240 miles south of Glasgow, Crewe station is the point where four regional lines converge with the West Coast Main Line (WCML). These provide long distance links between London and Scotland, as well as regional links to Birmingham, Shrewsbury, south Wales, Chester, north Wales, Liverpool, Manchester, Stoke-on-Trent and the Trent Valley via:
 - The Crewe and Chester line, which runs to Bangor and Holyhead along the North Wales Coast
 - The Crewe and Shrewsbury line, which runs to Hereford and South Wales
 - The Crewe Branch line, which runs to Stoke-on-Trent via Kidsgrove and onwards to Derby and the East Midlands
 - The Crewe and Stockport line, which runs to Crewe with Manchester and Manchester Airport
- 1.2 These links are important for passenger connectivity and freight, providing numerous operations for multiple operators from several locations in the area.
- 1.3 Crewe is therefore already a key hub station on the current rail network, providing 360 degree connectivity.
- 1.4 Crewe also serves a critically important role for national rail freight operations, with much of the freight traffic on the WCML routed through Basford Hall Yard, immediately south of Crewe.
- 1.5 Over the past decade, the number of passengers using Crewe station has grown, with over 4.2 million passengers estimated to have used the station in 2015/16 either to enter or exit or to interchange compared to 3.9 million in 2014/15³. Even without changes to existing services, passenger numbers are forecast to continue to grow.
- 1.6 The station benefits from good connections to other transport infrastructure such as junctions 16 and 17 on the M6 and regional roads, as well as the main airports in the Midlands and the North.
- 1.7 Crewe station is used by passengers from a wide catchment including Chester and Stoke-on-Trent. Crewe also attracts and generates rail trips to a wide range of rail destinations nationally.

³ Office of Road and Rail Statistics, 6 December 2016 - <http://www.orr.gov.uk/statistics/published-stats/station-usage-estimates>. This states there were 1,421,968 entries, 1,421,968 exits, 1,367,757 interchangers at Crewe station in 2015/16.

The station

Figure 1: Graphic showing Crewe station location

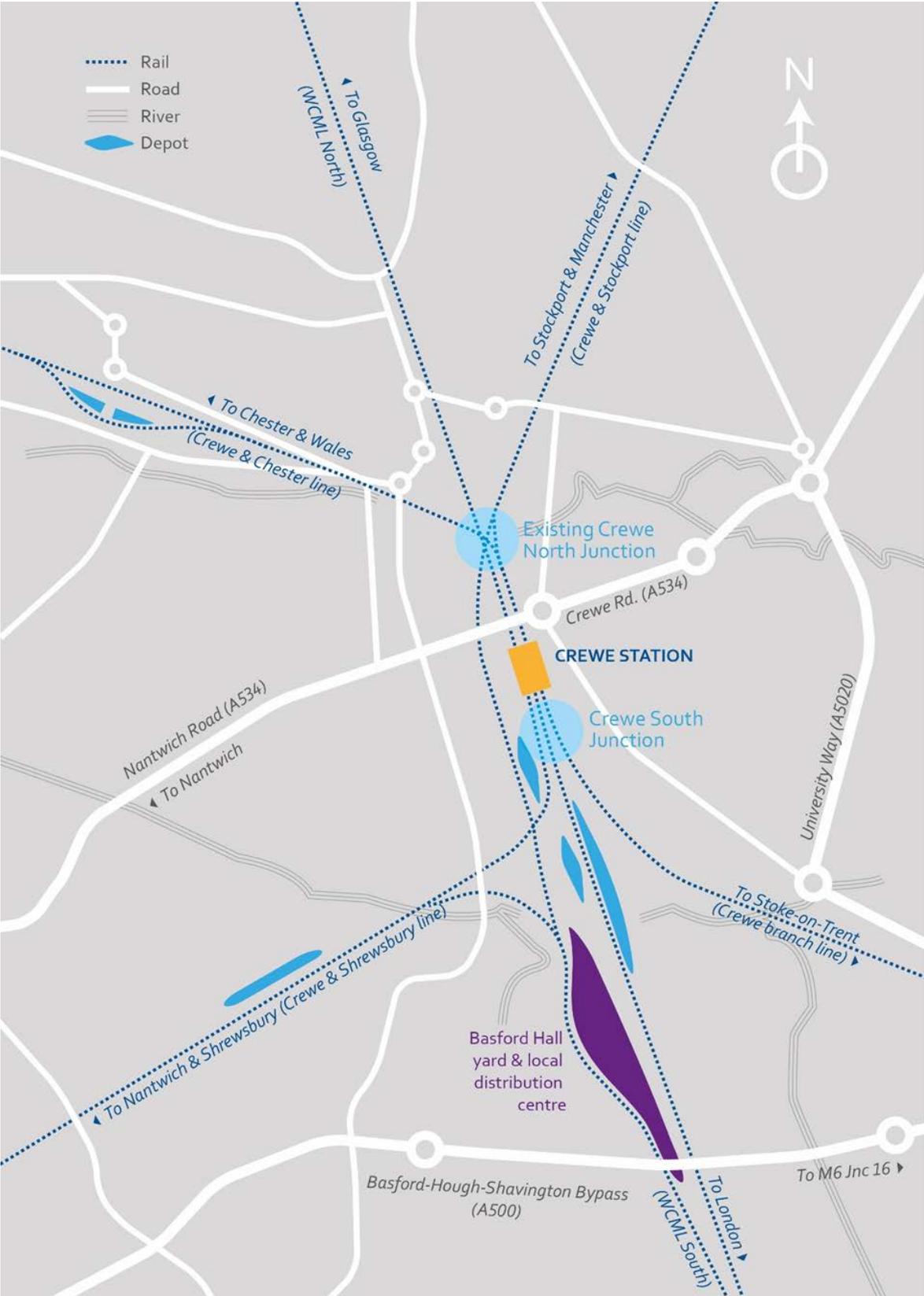
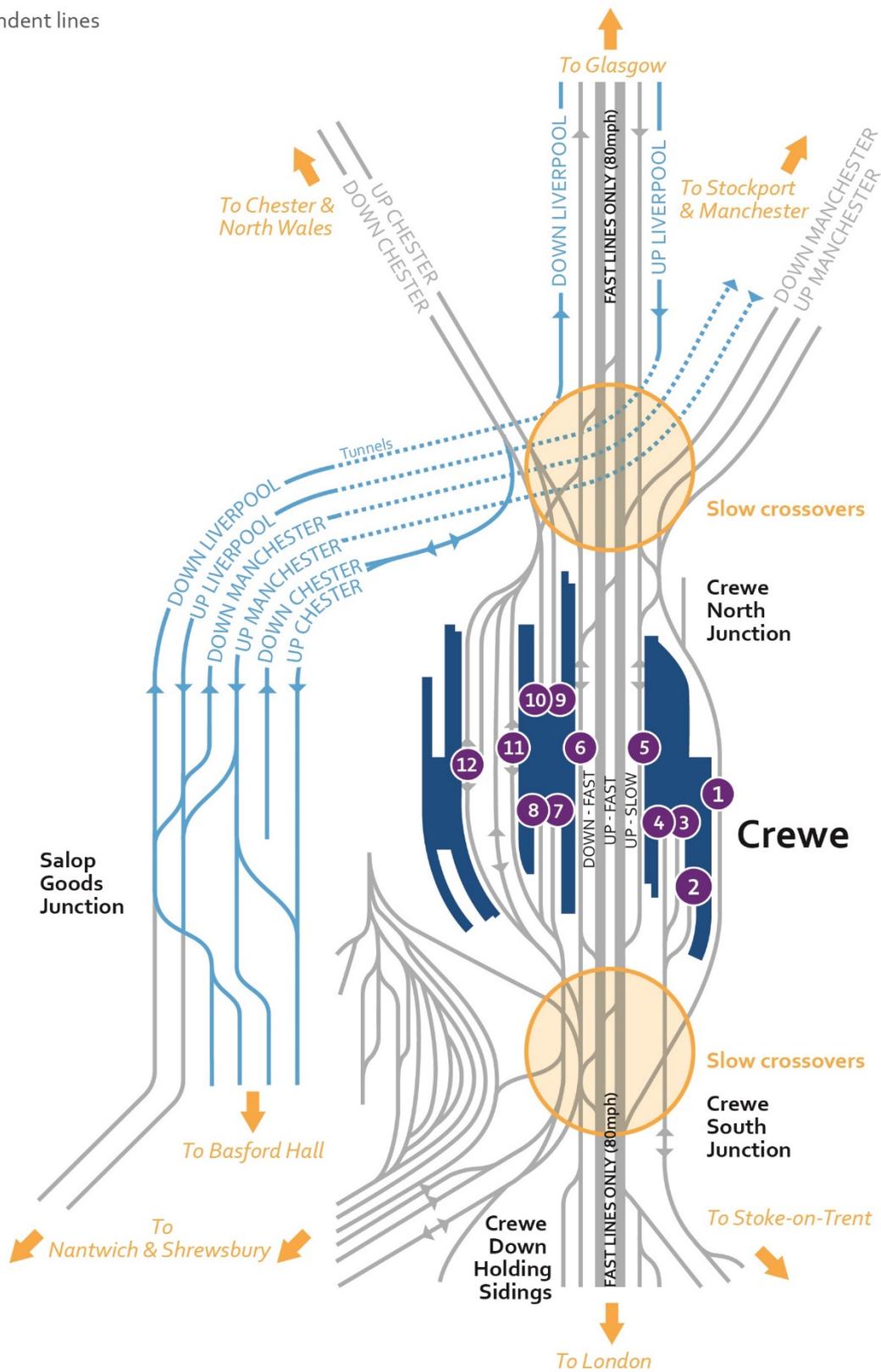


Figure 2: Section of Crewe station layout

- Platform number
- Independent lines



- 1.8 Network Rail is the infrastructure owner of Crewe station, and the operator for the InterCity West Coast Franchise is the station facility owner.
- 1.9 The station opened in 1837 on the Grand Junction Railway, to connect London to Birmingham services with those from Manchester to Liverpool and has been upgraded a number of times. It was rebuilt in 1861 to accommodate future rail demand. In the late 1890s the Independent lines were built, these are located to the west of the main station and are currently used to allow freight trains to reach Liverpool and Manchester without passing through the station. Further major remodelling and rationalisation took place in 1985.
- 1.10 There are three car parks for passengers with 1,231 spaces in total⁴, as well as some on-street parking. There is also bike storage at platform level.

Current train services at Crewe

- 1.11 The current Train Service Specification (TSS) typically sees 30 trains call at Crewe in a standard off-peak hour.
- 1.12 Most of these are through services with a station call of typically two or three minutes. The services can be considered in three main groupings as shown below:

Service type	Total services per hour, both directions	Origin and end destination
Inter city	10	London to Manchester x1 London to Liverpool x 1 London to Chester/North Wales x 1 Birmingham to Scotland (originates London) x1 London to Blackpool x 1 (reflects the open access service recently agreed access)
Regional	12	Cardiff /South Wales to Manchester x 1 Derby to Crewe x 1 London to Crewe x 1 Birmingham to Liverpool x 2 Crewe to Manchester (Airport) x 1
Local	8	Crewe to Manchester Piccadilly x 1 Birmingham to Crewe (via Stoke-on-Trent new franchise service) x 1 Crewe to Chester x 1 Crewe to Shrewsbury x 1
Total Services	30	
Service type	Total services per hour, both directions	Origin and end destination

Table 1: Current train services at Crewe in a standard off-peak hour

- 1.13 Table 1 reflects a small number of service increments included in recent franchise contracts. There are some occasional variances to the origin or destination of

⁴ The three car parks are: Pedley Road (550 parking spaces), Gresty Road (454 parking spaces) and Weston Road (227 parking spaces).

services and in the peak patterns towards London and Manchester there are some additional services.

- 1.14 There are also freight movements, empty coaching stock and other network trains or light engine moves which regularly take place through the station area.
- 1.15 Crewe station has 12 platforms. In practice, out of the 28 regular through services, 15 use only three platforms (platforms 5, 6 and 11). Seven of the 12 platforms are terminating bay platforms, which means that all of the through services have to be timetabled via a limited number of platforms (1, 5, 6, 11 and 12). Not all of these can be used for all of the origin or destinations served which leaves little capacity or flexibility with any delays having a knock on impact to the fast West Coast Anglo-Scottish, Liverpool and Manchester paths.
- 1.16 There are few terminating services, with bay platforms (2,7,8 and 10) and platform 12 rarely being used, reflecting a layout which no longer meets the needs of the railway at Crewe and does not enable the desired operational flexibility.
- 1.17 Additionally, many of the bay platforms are limited in length as the south facing platforms 2, 3, 4 can handle only 4-car trains (at 23m lengths), which limit the ability to accommodate growing passenger demand by lengthening trains. However, these bay platforms do offer accommodation for the stabling of rolling stock maintained or service cleaned in the Crewe area.
- 1.18 The nature of the layout with the converging/diverging routes results in a configuration of track infrastructure which in some cases, limits which of the through platforms can be accessed by approaching trains.

Freight

- 1.19 Crewe is a nationally important rail freight hub. The present layout was created to handle wagon load freight trains which have since been superseded by much longer intermodal trains (and other train movements). The grade separated Independent Lines are currently used for freight. See Figures 2 and 3.
- 1.20 The main freight yards are at Basford Hall, located to the south west of Crewe Station which house a range of operational and maintenance facilities for Direct Rail Services, DB Schenker and Freightliner in addition to the extensive Network Rail National Supply Chain from which maintenance of parts of the network is organised.

Current issues at Crewe station

- 1.21 Crewe station and its associated infrastructure are a major constraint on the national rail network. There are competing demands on the rail infrastructure at Crewe, with services having to cross the network, occupying capacity which prevents other moves in the area. The crossing movements make it difficult to increase service levels through Crewe, which has resulted in timetable patterns remaining constant since the last remodelling over 30 years ago. When the infrastructure was last remodelled in 1985 rail operations were very different and demand for rail services was in decline.

1.22 The Network Rail report *Crewe Hub – improving connectivity and capacity for our customers*⁵ (November 2016), set out some of the current challenges at Crewe station:

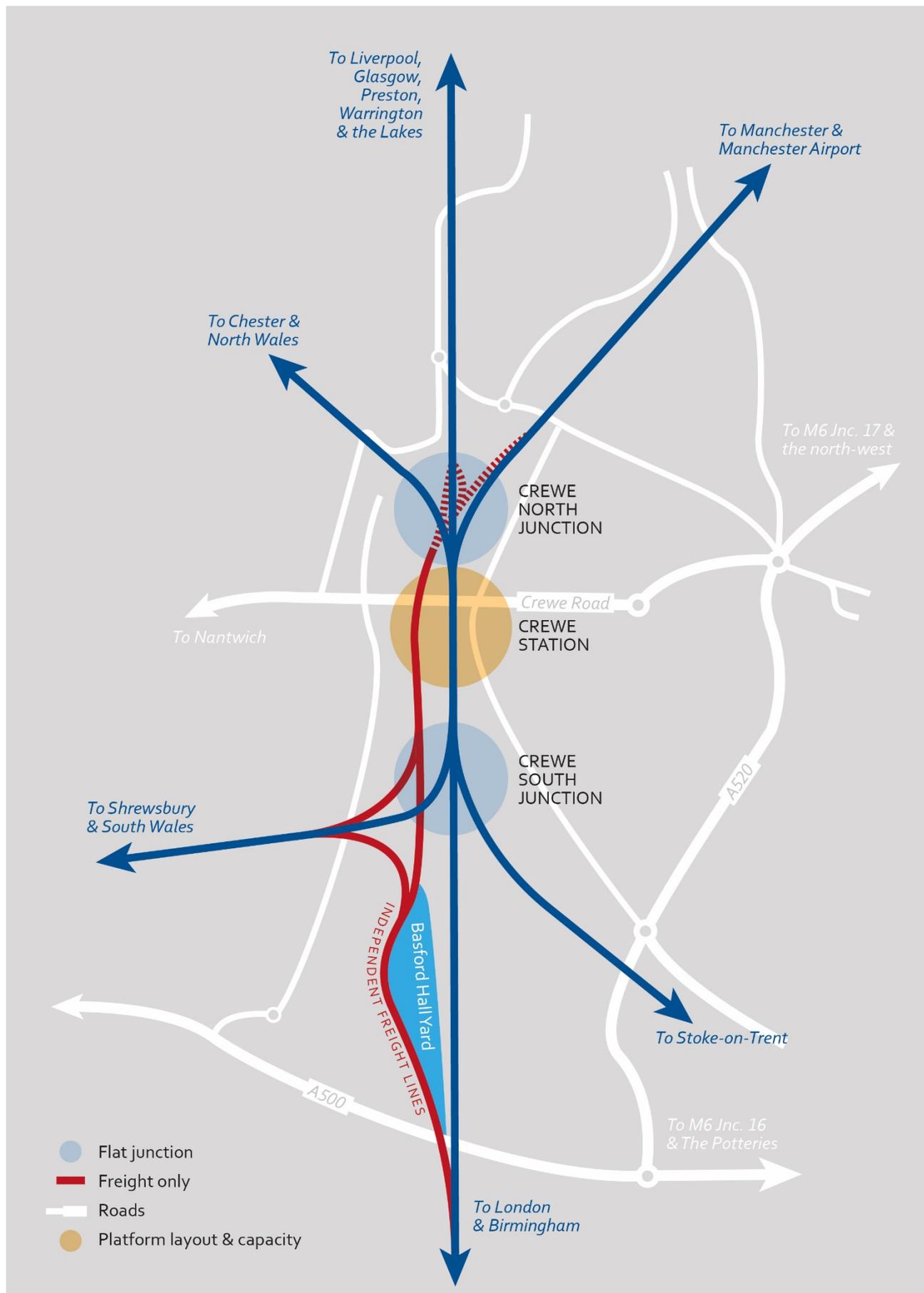
- The existing junctions, north and south of Crewe, are busy and unable to fit more crossing train movements acting as a constraint when timetabling services. This means that any increase to the frequency of services and future HS2 services is challenging
- Capacity at the existing station means accommodating an increase in services or passengers would be challenging. This means that only limited growth is possible, missing the opportunity to service potential new markets
- The need for trains to arrive at Crewe station in a specified order to allow crossing moves and the absence of effective spare capacity constrains operational flexibility and resilience, hindering recovery following any delays. This bottleneck effect therefore impacts all routes risking the performance of passenger and freight activities

1.23 In addition, the Network Rail report suggested roads surrounding Crewe station can be congested with travel to and from the station; with both local and out of town passengers either parking or picking up/dropping off for rail services at Crewe.

1.24 Network Rail's advice is that stopping more HS2 services than are included in the current business case, and increasing other services would be very difficult with the current layout.

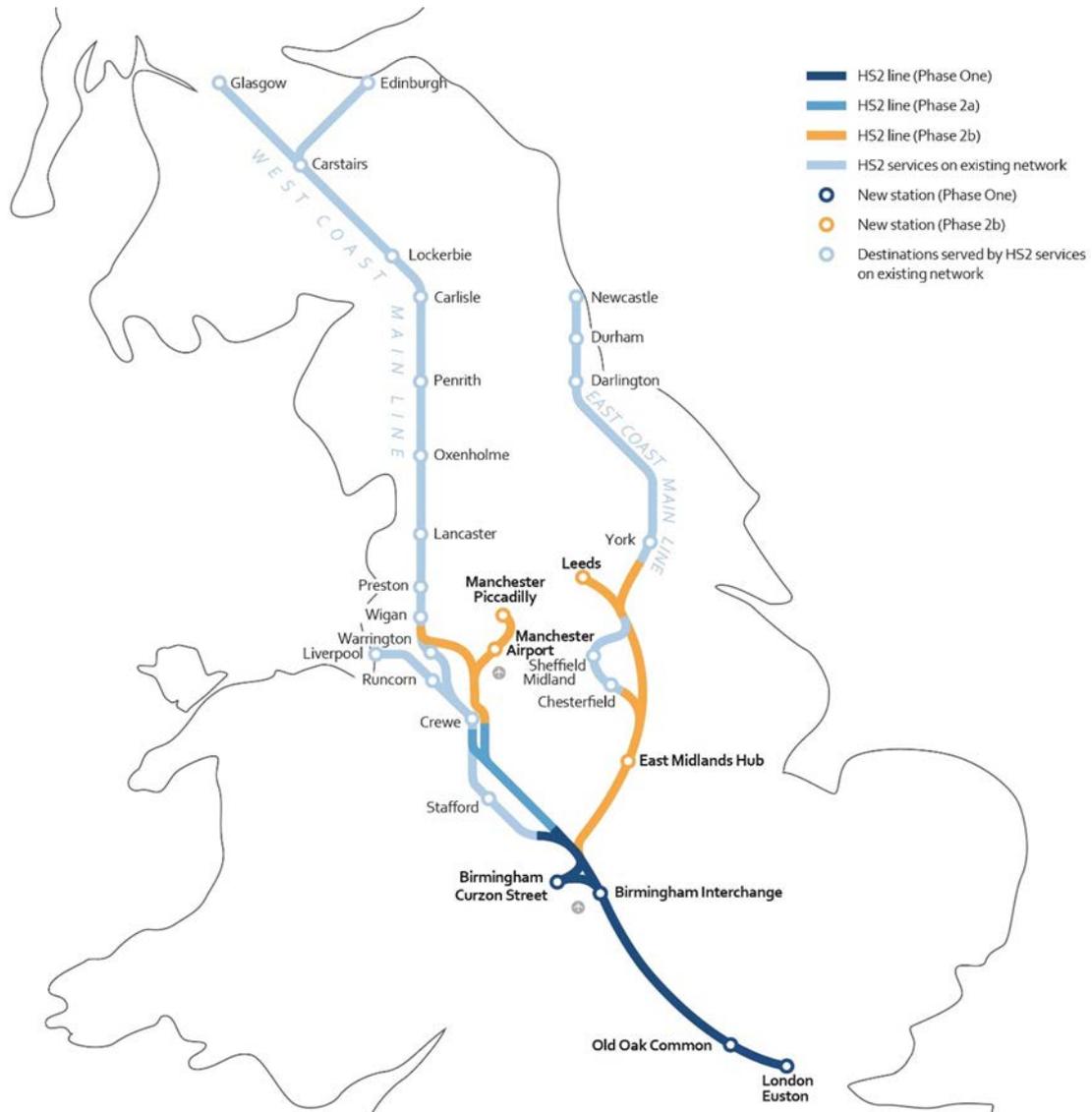
⁵ <https://www.networkrail.co.uk/wp-content/uploads/2016/11/Crewe-Hub-improving-capacity-and-connectivity-for-our-customers.pdf>

Figure 3: Crewe station illustrating existing constraints



2. HS2 in Crewe

Figure 4: The Y Network



- 2.1 HS2 is a new high speed rail network for the UK, connecting London with major cities in the Midlands and the north of England. It is a Y shaped network that will be delivered in several stages. HS2 trains will also run beyond the Y network to serve places such as Liverpool, Preston, Newcastle and Scotland on the conventional network. It is intended to be built in three phases.

Phase One

- 2.2 Phase One of HS2 will see a new high speed line constructed from Euston to north of Birmingham, where it will re-join the existing WCML. New high speed trains will serve Birmingham city centre and an interchange station designed to serve the wider West Midlands. At Old Oak Common in West London, a new interchange will be built connecting HS2 with Crossrail and the Great Western Main Line. Passenger services are planned to commence on the Phase One route in 2026.

Phase 2a

- 2.3 In November 2015 the Government announced its intention to accelerate the delivery of the section of Phase Two between the West Midlands and Crewe (Phase 2a). At the northern end it will connect with the WCML to the south of Crewe to allow HS2 services to join the WCML and call at Crewe station.
- 2.4 Phase 2a is expected to be built and operational by 2027 (subject to parliamentary approval of the Phase 2a hybrid Bill).

Phase 2b

- 2.5 In November 2016 the Government confirmed the majority of its preferred route for Phase 2b of HS2, which will complete the full Y network. The Secretary of State has now confirmed the remaining sections of the Government's preferred route for the full Phase 2b route after considering responses to the 2016 consultation⁶. The southern end of the Western Leg connects to Phase 2a (south of Crewe) and goes onto Manchester with a connection back to the WCML south of Wigan. The Eastern Leg connects to the Phase One route and goes onto Leeds with a connection back to the East Coast Main Line (ECML) at Church Fenton. Phase 2b is expected to be built and operational by 2033 (subject to parliamentary approval of the Phase 2b hybrid Bill).

Indicative HS2 train service for Crewe

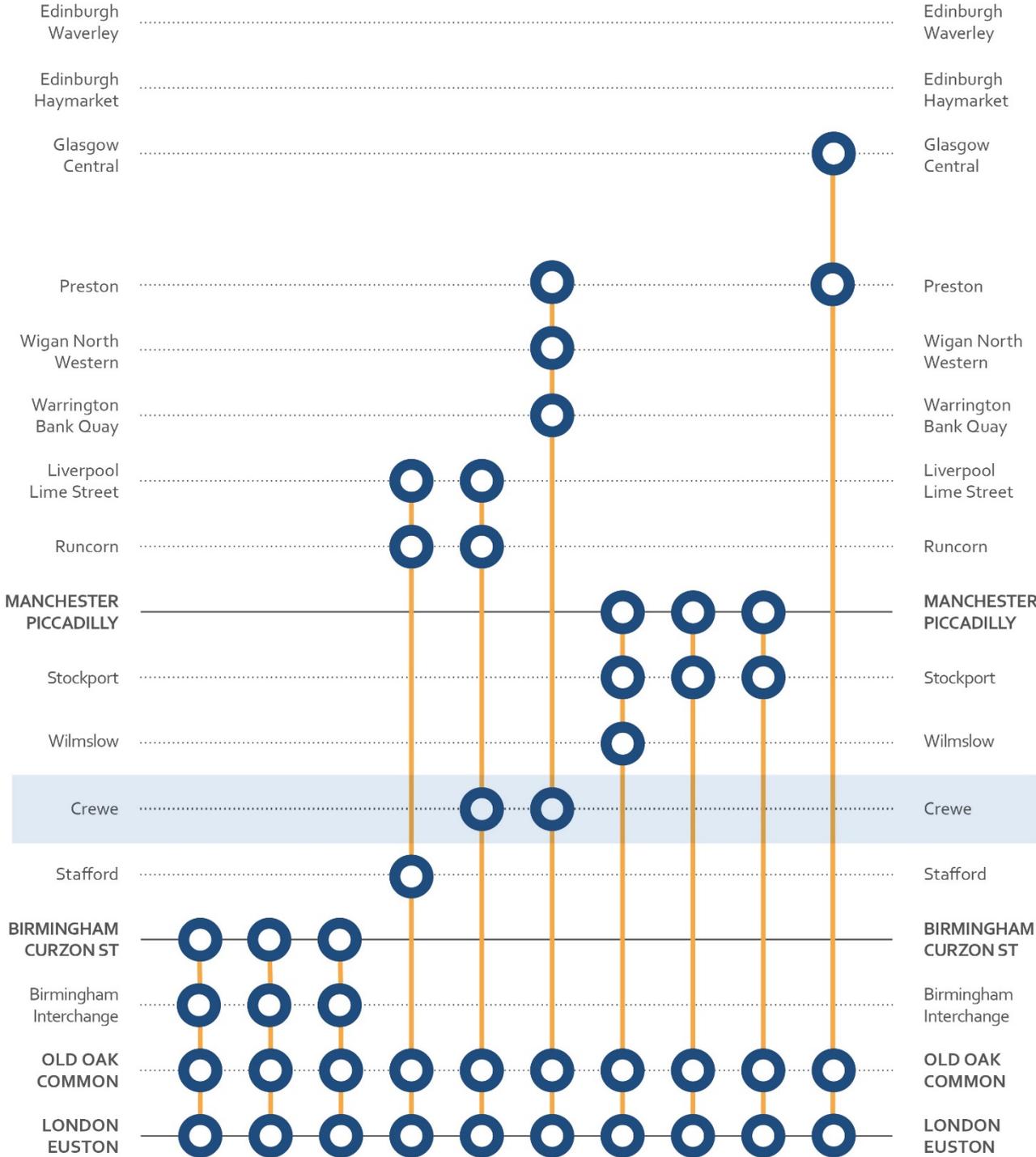
- 2.6 The underpinning assumptions in the HS2 business case have since 2011⁷ included two HS2 services stopping at Crewe station each hour, in each direction, providing services to London, Preston and Liverpool. Once Phase 2a opens, HS2 would provide a best journey time to London of 55 minutes in comparison to 96 today. No

⁶ As set out in High Speed Two Phase 2b: Crewe to Manchester, West Midlands to Leeds and beyond: Phase 2b route decision - <https://www.gov.uk/government/consultations/hs2-crewe-to-manchester-west-midlands-to-leeds-route-refinement-consultation-2016>

⁷ Economic Case for HS2 - The Y Network and London – West Midlands February 2011: <http://webarchive.nationalarchives.gov.uk/20110720163056/http://highspeedrail.dft.gov.uk/sites/highspeedrail.dft.gov.uk/files/hs2-economic-case.pdf>

further changes to the HS2 stopping service patterns at Crewe station have been assumed with the expected opening of Phase 2b in 2033.

Figure 5: Indicative Phase 2a TSS for Crewe⁸



⁸ Each line in diagram represents one train per hour.

Work at Crewe to facilitate Phase 2a train service

- 2.7 The Phase 2a high speed line connects to the WCML south of Crewe via two spur lines. Some modifications will be required to the existing railway infrastructure in the Crewe area to facilitate the proposed service pattern for Phase 2a in 2027. The hybrid Bill for Phase 2a proposes the following interventions:
- junction enhancement at Sandbach and Maw Green to allow HS2 trains to pass slower stopping services
 - junction enhancement south of Crewe, to allow HS2 services to cross from slow to fast lines at higher speed, in both directions simultaneously (in parallel)
 - a new platform at Crewe station on the 'Manchester Independent' lines, currently used for freight (see Figure 2). This could allow passenger services, such as the current Cardiff - Manchester service, to approach from the west of Crewe and leave to the east without needing to cross all of the existing lines through the station at grade
- 2.8 The lines between Crewe and Manchester and between Crewe and Weaver will be nearing full capacity between 2027 and 2033, with existing freight, new HS2 trains, and conventional rail services. This will limit options for growth between 2027 and 2033, prior to Phase 2b infrastructure releasing capacity on these lines by providing an alternative route (the preferred route for the Western Leg of Phase 2b passes Crewe under tunnel).
- 2.9 Further information on the Phase 2a hybrid Bill and accompanying Environmental Statement can be found here: <https://www.gov.uk/hs2> .

3. Background to proposals for a rail hub at Crewe

3.1 The 2013 consultation *High Speed Rail: Investing in Britain's Future: Consultation on the route from the West Midlands to Manchester, Leeds and Beyond* (July 2013) set out the ambition for connecting the UK. Referring to Crewe, it stated:

“Further south, HS2 would connect with the WCML at Crewe, meaning key destinations like Liverpool, Runcorn, Crewe and Warrington would benefit from direct services. By calling at the key rail interchange of Crewe high speed train services would also be easily accessible for passengers in north Wales and elsewhere⁹”

3.2 As part of the 2013 Phase Two consultation process, respondents asked if there were opportunities to deliver some or all of the Phase Two route sooner. Sir David Higgins, in his report *Rebalancing Britain* (October 2014) recommended accelerating the section of the consultation route, with some minor refinements, from Fradley, north of Birmingham, to Crewe, now known as Phase 2a.

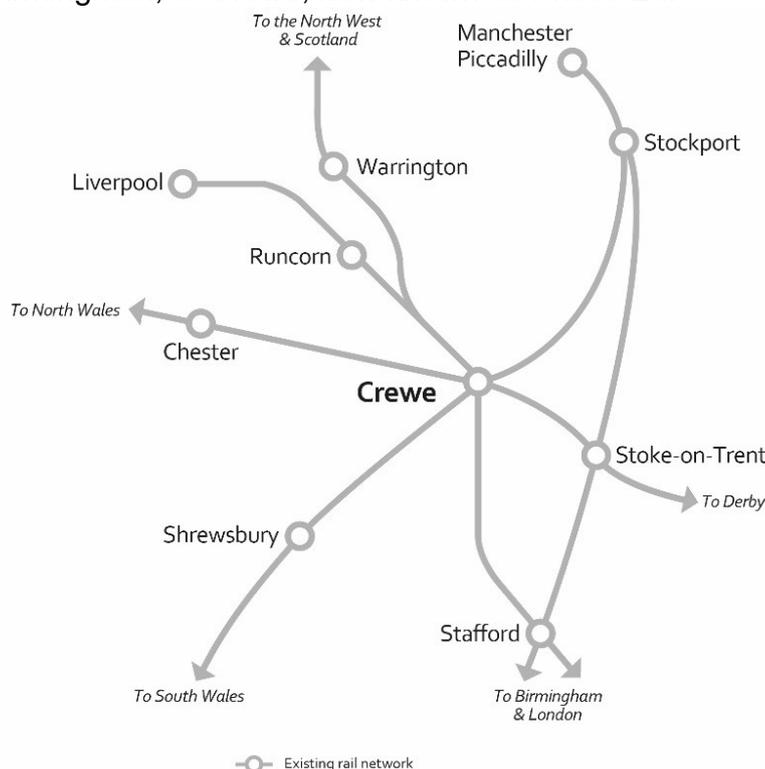


Figure 6: Existing connectivity at Crewe

⁹ Paragraph 3.6.2 in *High Speed Rail: Investing in Britain's Future. Consultation on the route from the West Midlands to Manchester, Leeds and beyond* (July 2013).

Building on existing connectivity

- 3.3 In addition to acceleration of the HS2 route to Crewe, Sir David Higgins' recommended in his reports *HS2 Plus*¹⁰ (March 2014) and *Rebalancing Britain* (October 2014)¹¹, that a North West hub station should be considered at Crewe, bringing together a better HS2 service with the existing rail network.
- 3.4 Crewe's existing links, and its place on the proposed HS2 network were highlighted:

*"Crewe has been a major railway intersection since Victorian times. Its raison d'être was to offer connectivity from the North-South artery to North Wales, Merseyside, Staffordshire and the North West in general"*¹²

- 3.5 A hub which could better integrate HS2 services with the existing network, enabling greater interchange between these services so that the benefits of higher speed trains spread to a wider range of places. A hub could build on the existing strong transport links enabling better regional rail connectivity and, with investment from the local area, be served by improved road access.
- 3.6 Sir David also highlighted that Crewe could act as a real agent of change for the region and this would create extra capacity on HS2 and the existing network; bringing benefits to the North sooner. *Rebalancing Britain* acknowledged that a hub at Crewe would bring benefits to the wider sub-region. It recognised the desire of many stakeholders in the region to capitalise on the journey time and connectivity benefits HS2 provides.
- 3.7 He went on to say that more detailed work was needed to develop the recommendation for a hub and "*that it is for Government to decide whether it agrees and to pronounce on the legislative consequences*"¹³.
- 3.8 Since 2014, the Constellation Partnership (formerly known as the Northern Gateway Development Zone) has been looking at the growth that could be generated through HS2. The Partnership have been developing a Growth Strategy since 2016, looking at a package of transport and infrastructure measures that could deliver a highly connected HS2 sub-region, bringing places like Crewe, Stoke-on-Trent and Stafford closer together. The Partnership's Growth Strategy will also consider evidence and funding options for any transport aspirations. Further information is in Chapter 6.

¹⁰ <http://assets.hs2.org.uk/sites/default/files/inserts/Higgins%20Report%20-%20HS2%20Plus.pdf>

¹¹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374709/Rebalancing_Britain_-_From_HS2_towards_a_national_transport_strategy.pdf

¹² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374709/Rebalancing_Britain_-_From_HS2_towards_a_national_transport_strategy.pdf

¹³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/374709/Rebalancing_Britain_-_From_HS2_towards_a_national_transport_strategy.pdf - page 28

4. Progress on developing options for Crewe Hub station

- 4.1 Following Sir David Higgins' recommendation, the Government asked Network Rail and HS2 Ltd to undertake technical work to look at how the existing station at Crewe might be enhanced.
- 4.2 In November 2015 we published *High Speed Two: East and West, the Next Steps to Crewe and Beyond*¹⁴ (from this point referred to as the 2015 Command Paper) where we set out our plans to accelerate construction of the HS2 route to Crewe (the Phase 2a scheme).
- 4.3 The 2015 Command Paper acknowledged that the current layout through Crewe is outdated and acts as a constraint for services on the WCML. It outlined the potential benefits from better integrating HS2 services with the existing network within a Crewe Hub and asked Network Rail and HS2 Ltd to examine options which could:
 - allow additional HS2 services to call at Crewe
 - address the existing constraints
 - provide for future growth
- 4.4 The 2015 Command Paper set out that Network Rail were considering two locations for a Crewe Hub station: at, or immediately south of, the existing Crewe station; or Basford Hall (around 2km south of Crewe).
- 4.5 In November 2016, Network Rail issued a summary of this work and provided interim advice to Government (*Crewe Hub: Improving Connectivity and Capacity for our Customers*¹⁵) which suggested that it would be feasible to deliver a Crewe Hub and recommended that, if the Crewe Hub scheme is to be taken forward, it should be located at the site of the existing station.
- 4.6 In November 2016, the Government supported this conclusion in *High Speed Two: From Crewe to Manchester, the West Midlands to Leeds and Beyond*¹⁶ (from this point referred to as the 2016 Command Paper). There was clear evidence that, whilst a station at Basford Hall may have offered some growth opportunities for the region, to fully realise these opportunities the freight facility located at Basford Hall would have to be relocated resulting in significant cost and disruption. The existing station site offers excellent opportunities with 360 degree connectivity to major destinations and regions.

¹⁴ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/568208/high-speed-two-crewe-manchester-west-midlands-leeds-web-version.pdf - paragraph 23

¹⁵ <https://www.networkrail.co.uk/wp-content/uploads/2016/11/Crewe-Hub-improving-capacity-and-connectivity-for-our-customers.pdf>

¹⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/568208/high-speed-two-crewe-manchester-west-midlands-leeds-web-version.pdf

4.7 Network Rail and HS2 Ltd were also asked to continue to work up options for what investment might be required at the existing station to:

- Address key constraints on the rail network at Crewe today to facilitate future conventional and HS2 services from 2027
- Allow for more HS2 services to stop at Crewe station, including services between Manchester and Birmingham, to provide Crewe with both northbound and southbound high speed connectivity
- Accommodate splitting and joining of 400m HS2 trains at Crewe, to serve as many destinations as possible on the existing network
- Construct a connection from the WCML onto the HS2 network north of Crewe station, to enable northbound high speed connectivity from Crewe

5. Infrastructure options for possible HS2 services

- 5.1 As well as work on options for a Crewe Hub outlined above, in the 2016 Command Paper, the Government also asked HS2 Ltd to explore how HS2 services could be extended to serve Stoke-on-Trent. The results of that work found that the best way to serve Stoke-on-Trent would be a service via Handsacre junction and Stafford that could continue beyond Stoke-on-Trent to Macclesfield. The work also found that some additional interventions at Crewe, namely lengthening of platforms to accommodate the splitting and joining of longer trains, could allow such a service to operate without needing an additional train path on the Phase One London to West Midlands HS2 line.
- 5.2 Whilst technical work is still progressing, we have undertaken further analysis on different service scenarios in 2027 and 2033 which could build on Crewe's existing connectivity and provide an opportunity for the future HS2 operator to serve Stoke-on-Trent. Preliminary assessments of the benefits of platform lengthening and a junction north of Crewe are included in Tables 2, 3 and 4.
- 5.3 The results are based on indicative journey time estimates, which are subject to change once full feasibility testing of any services via these routes has been undertaken. Options to split and join HS2 trains, and to stop more HS2 services would increase some journey times compared to current assumptions for HS2 services (it could also increase journey times for other services). This has been factored in to the demand modelling.
- 5.4 The economic analysis presented in this consultation, along with the methodology, is also presented in the HS2 Phase Two Economic Case (referred to from here on in this document as the 'central case'):
<https://www.gov.uk/government/publications/hs2-phase-2a-economic-case>.
- 5.5 HS2 Ltd have specified the following three scenarios to demonstrate the potential value for money of developing a Crewe Hub:
 - Scenario 1 – Crewe Hub route serving Stoke-on-Trent (through splitting and joining one train per hour)
 - Scenario 2 – Crewe Hub route serving Stoke-on-Trent and upgrading capacity (through splitting and joining two trains per hour)
 - Scenario 3 – Crewe Hub with a new northern junction (which is in addition to Scenario 2)
- 5.6 While these scenarios inform development of options for infrastructure at Crewe, train services themselves are not a subject of this consultation. The West Coast Partnership franchisee will develop options for future services working with Network

Rail, HS2 Ltd, other operators and wider stakeholders in a consultative manner, taking account of a range of factors including the latest information on demand.

- 5.7 Any decision to develop these or other additional service scenarios would need to be on the basis of appropriate funding and a full business case.

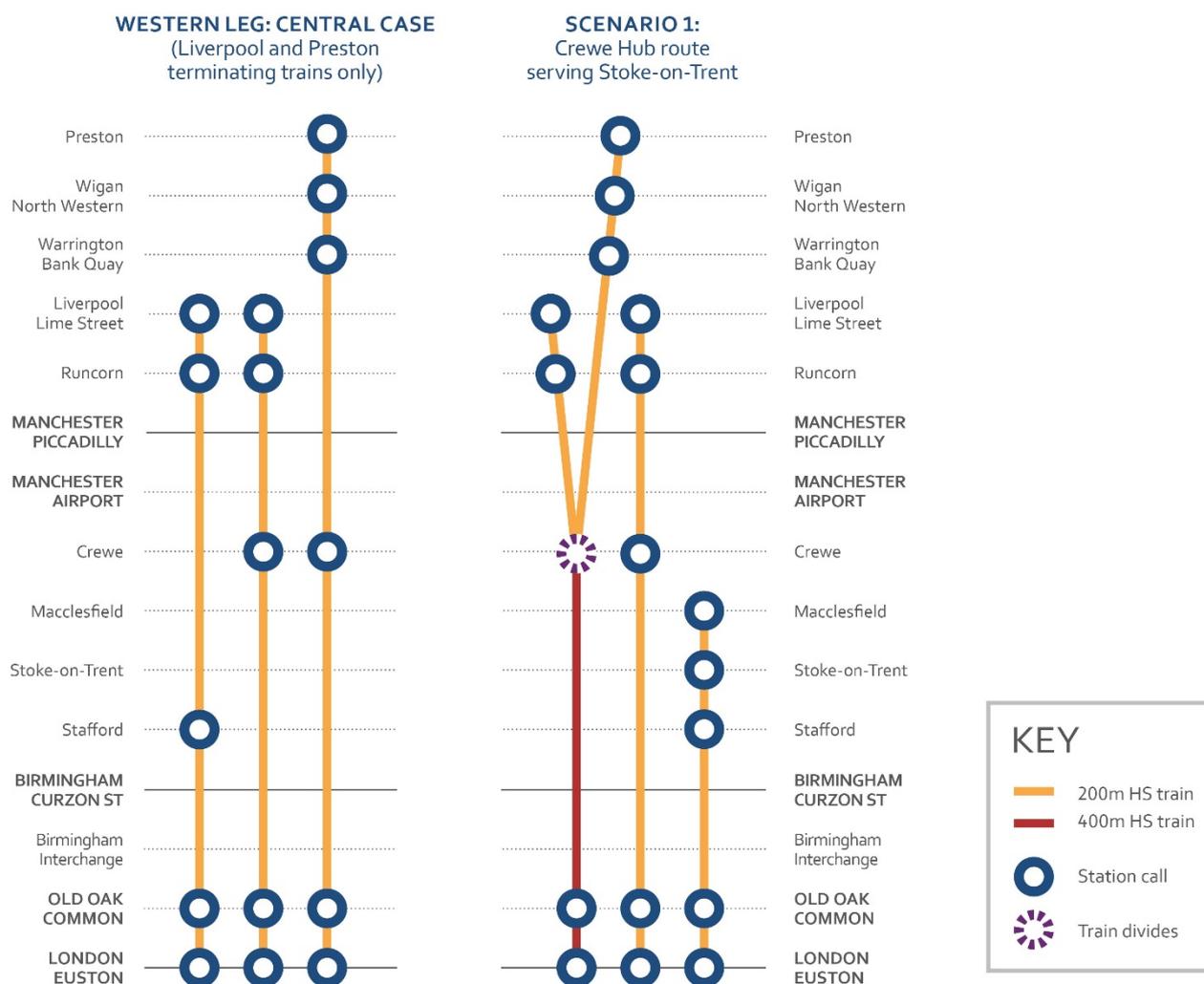
Extending platforms at Crewe

- 5.8 Creating 400m platforms at Crewe for HS2 services gives the opportunity of splitting and joining services travelling from and to London at Crewe. Dividing a train in this way separates it into two trains partway along its route, so as to serve two different destinations.
- 5.9 For example, this could allow the separate Liverpool and Preston services planned under HS2 to travel as a single train to Crewe from London, and then split to reach both destinations.
- 5.10 We have modelled the benefits of splitting and joining one and two trains per hour for services running from 2027 and 2033.

Splitting and joining one train per hour - Scenario 1

- 5.11 Changes from the central case Train Service Specification (TSS) include joining the planned HS2 London - Preston and London - Liverpool services and splitting these at Crewe to reach both destinations. This frees up a path on the Phase One route which could be used to serve Stoke-on-Trent through a HS2 service on the existing network. This means an additional path would not be required on the HS2 London-Birmingham core route.
- 5.12 A further potential benefit of this scenario is that the HS2 stop at Stafford, which is currently proposed on the London-Liverpool service in the central case TSS, could be transferred to the Stoke-on-Trent service outlined above. Both of the HS2 Liverpool services can run using the Phase 2a line rather than the West Coast Main Line (WCML) between Birmingham and Crewe, and improve journey times on the second Liverpool service.
- 5.13 Figure 7 shows the indicative TSS for Scenario 1 compared to the HS2 central case TSS.

Figure 7: Crewe Network – Indicative service patterns for Crewe Hub Scenario 1



5.14 Table 2 presents the indicative benefits of splitting and joining one train per hour at Crewe from 2027 or from 2033

PV, £bn 2015 prices	Change in BCR Components	
	Services resuming from 2027	Services resuming from 2033
1. Net transport benefits	1.0	0.8
2. Wider Economic Impacts (WEIs)	0.2	0.2
3. Net benefits including WEIs (1) + (2)	1.1	1.0
4. Operating costs	0.7	0.6
5. Rolling Stock Cost	0.1	0.1
6. Revenues	0.5	0.4

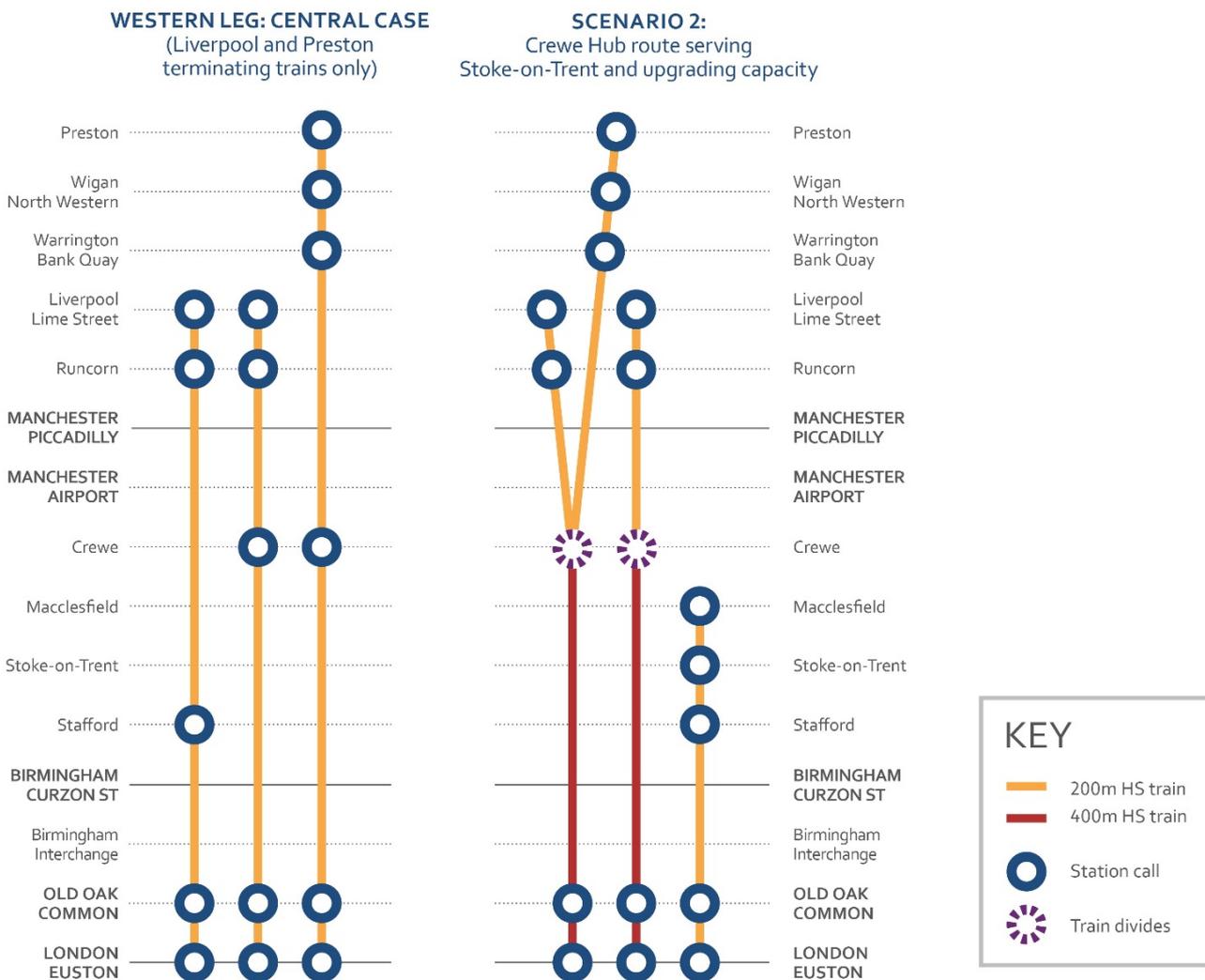
Table 2 Incremental change in BCR components of splitting and joining one train per hour

Splitting and joining two trains per hour - Scenario 2

5.15 Changes from the central case TSS include joining a London-Preston and London-Liverpool service and splitting these at Crewe. This enables a HS2 service on the existing network via Handsacre junction that is able to serve Stafford, Stoke-on-Trent and Macclesfield. The platform lengthening also allows another two trains travelling from London to be joined. If both of the Liverpool services were to be run as 400m trains and split/join at Crewe, there is in effect a further (200m) HS2 train compared to the central case TSS of which one train unit carries on to Liverpool and a spare unit is left at Crewe. This unit could also serve a range of other northern destinations, subject to business case, capacity on the existing rail network and further understanding of any infrastructure required (e.g. electrification) on the current network.

5.16 Figure 8 shows the indicative TSS for Scenario 2 compared to the HS2 central case TSS.

Figure 8: Crewe Network – Indicative service patterns for Crewe Hub Scenario 2



5.17 Table 3 shows the initial economic modelling for splitting and joining two 400m trains per hour at Crewe and serving Stoke-on-Trent. For the purposes of the modelling where we assume two 400m trains splitting and joining, the extra 200m unit is assumed to terminate at Crewe.

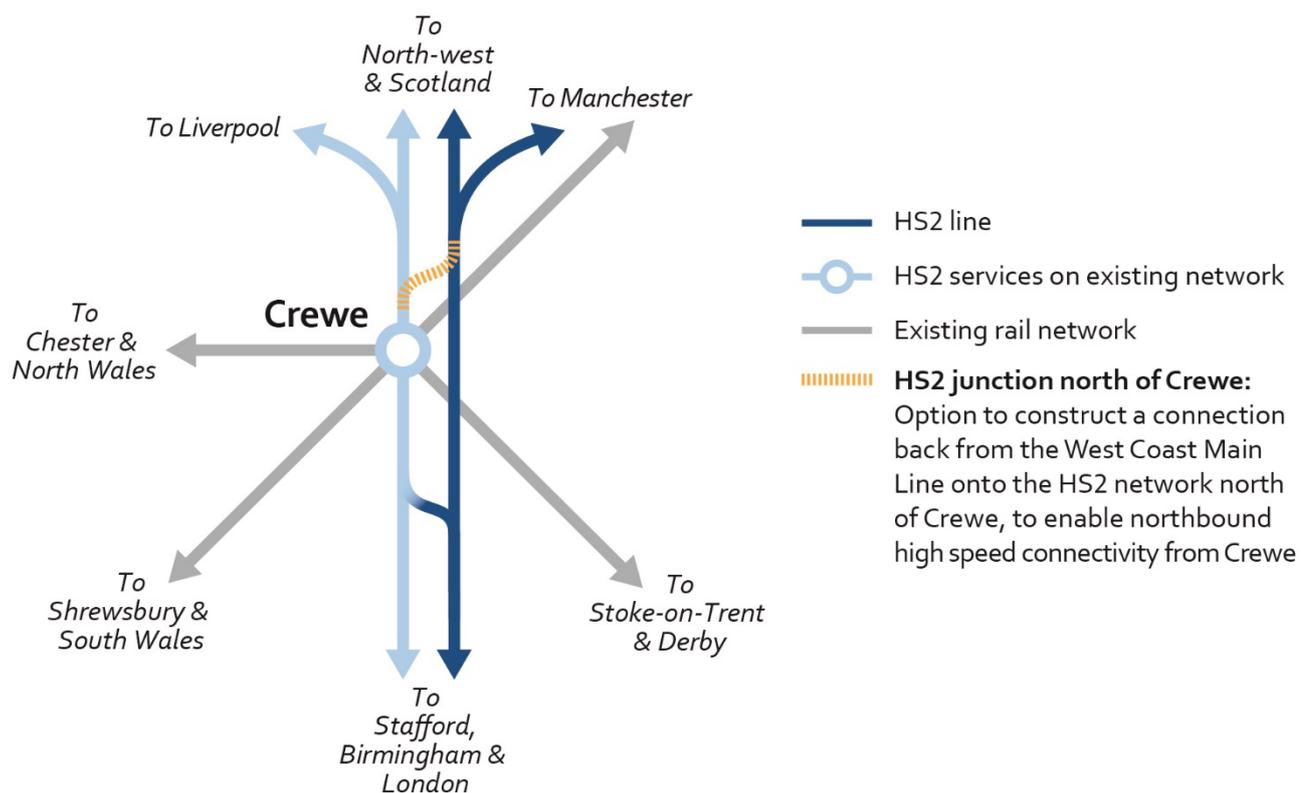
5.18 Table 3 presents the results of the scenario.

PV, £bn 2015 prices	Change in BCR components	
	Services resuming from 2027	Services resuming from 2033
1. Net transport benefits	1.8	1.6
2. Wider Economic Impacts (WEIs)	0.4	0.3
3. Net benefits including WEIs	2.2	1.9
4. Operating costs	1.3	1.1
5. Rolling Stock cost	0.2	0.2
6. Revenues	1.0	0.8

Table 3 Incremental change in BCR components of splitting and joining two trains per hour

HS2 junction north of Crewe - Scenario 3

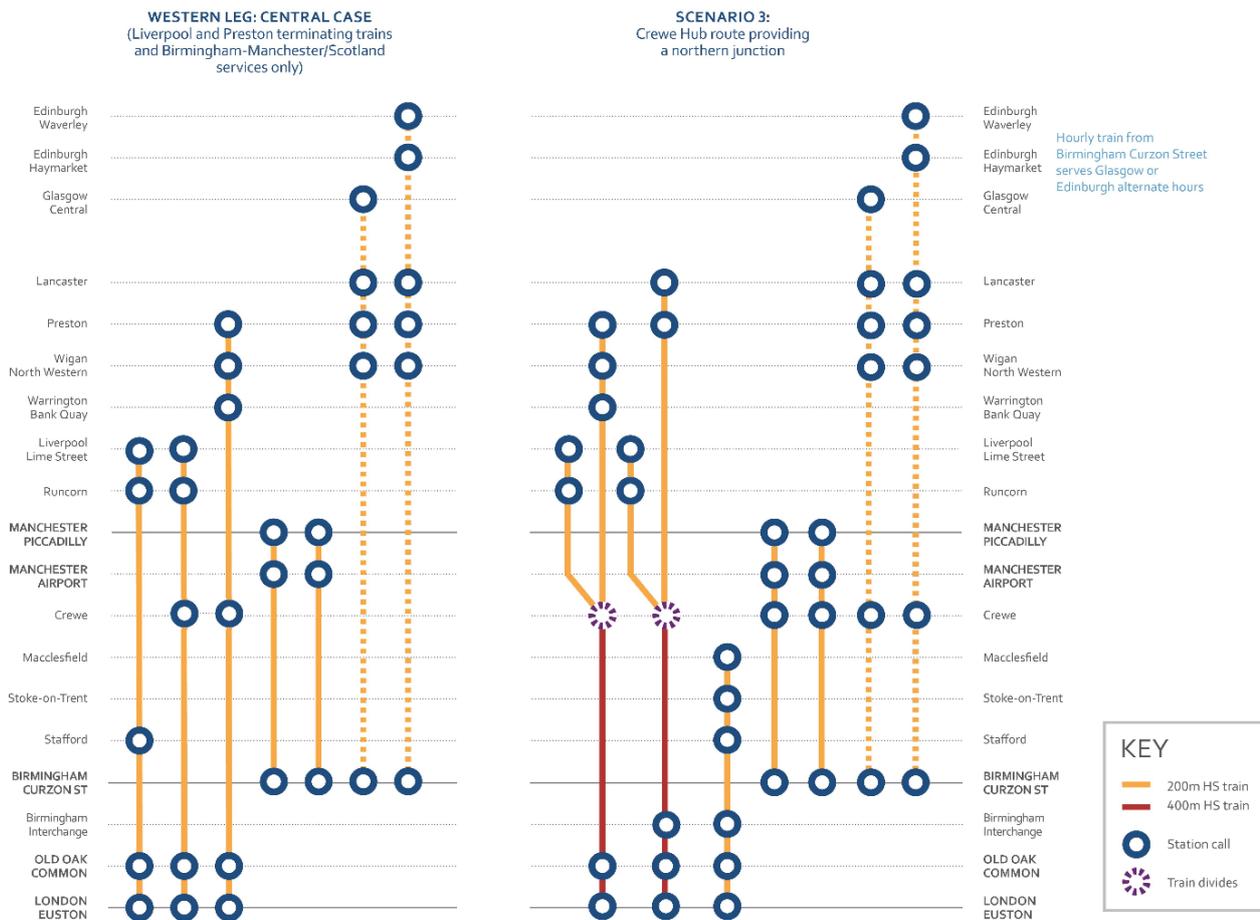
Figure 9: Option for new junction north of Crewe



- 5.19 In addition to the potential services outlined above, a junction between the WCML north of Crewe and the high speed line to Manchester, and the right infrastructure at Crewe itself could enable additional HS2 services to stop at Crewe in 2033.
- 5.20 We have looked at the case for stopping the planned two high speed services each hour between Birmingham and Manchester, as well as the service from Birmingham to Scotland (which is assumed to alternate between Edinburgh and Glasgow in different hours, and also calls at Preston).
- 5.21 The modelled TSS for this scenario assumes joining a London-Preston and London-Liverpool service and splitting these at Crewe, together with a second Liverpool service from London to as set out in paragraph 5.13.
- 5.22 For illustrative purposes, the demand modelling set out in the HS2 Phase Two Economic Case assumes the resulting extra unit carries onto Lancaster via the proposed junction north of Crewe, though this could be sent to other destinations.
- 5.23 Combined with the option to split and join two trains described above, this scenario would see Crewe receive five HS2 trains per hour from the south and up to seven trains per hour from the north (seven as a result of splitting and joining).
- 5.24 Under this option, Crewe would have direct HS2 services to key destinations including London, Old Oak Common, Birmingham, Manchester Airport, Manchester Piccadilly, Preston, Liverpool, Glasgow and Edinburgh.
- 5.25 There could be options in the future for potentially combining services to Manchester from Birmingham via Crewe with future Northern Powerhouse Rail ambitions for better connectivity between the northern cities¹⁷.
- 5.26 Some important limitations on the analysis done to date include:
- The interventions necessary to deliver these services are not included or funded within the current scope of the HS2 programme
 - The interventions are subject to a full operability assessment to assess the deliverability of these services. As part of this, we will need to understand the capacity and availability of the infrastructure to enable these services
 - The results are based on indicative journey time estimates, which are subject to change once the full feasibility of any services via these routes has been undertaken
 - The results have not factored in further infrastructure spend that might be needed in response to an increase in passenger demand at Crewe
 - These results are indicative and further analysis is ongoing. Any decision to take these options forward would need to be on the basis of a full business case
- 5.27 Figure 10 shows the indicative service pattern for Scenario 3 compared to the HS2 central case TSS.

¹⁷ Northern Transport Strategy - March 2015: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/427339/the-northern-powerhouse-tagged.pdf

Figure 10: Crewe Network – Indicative service patterns for Crewe Hub Scenario 3



*The dotted lines in Figure 10, above, represent one hourly train which serves Glasgow or Edinburgh at alternate hours. The Scenario 3 diagram therefore shows five hourly trains stopping at Crewe.

5.28 The combined impact of the proposed junction north of Crewe and platform lengthening are presented in the table below.

PV, £bn 2015 prices	Change in BCR components
	Services resuming from 2033
1. Net transport benefits	2.7
2. Wider Economic Impacts (WEIs)	0.7
3. Net benefits including WEIs	3.4
4. Operating costs	1.3
5. Rolling Stock cost	0.3
6. Revenues	1.4

Table 4 Incremental change in BCR components of exploiting northern junction capability

Signalling renewals and rationalising the layout at Crewe station

- 5.29 Between 2027 and 2033, after HS2 Phase 2a is open and before Phase 2b is operational, the network at Crewe will be even more intensively used than today with 7 HS2 trains per hour running through in each direction.
- 5.30 Over and above any HS2 related work, the current signalling at Crewe is 30-50 years old, and Network Rail has advised that this will need renewing in the medium term.
- 5.31 Given the intensity of services at Crewe between 2027 and 2033, including HS2 services, it would be desirable to avoid major renewals in this period.
- 5.32 The renewal of signalling could also present an opportunity to simplify the current layout at Crewe, by removing some redundant infrastructure such as track, signals and overhead line, addressing network constraints that inhibit train service changes and accommodating future growth. These changes could also improve railway performance, leading to more reliable journeys. Much of this would be true without HS2, however, there are also some signalling changes which will be needed in the Crewe area to operate HS2 effectively.

Combined scheme for Crewe

- 5.33 Network Rail is therefore exploring with HS2 Ltd whether there is a combined scheme for Crewe, capable of being delivered before 2027, which includes an overarching signalling renewal, signalling work for HS2, simplification of the layout, and provision of 400m platforms.

6. Constellation Partnership Growth Strategy

6.1 In March 2014, the HS2 Growth Taskforce, chaired by Lord Deighton, published its *High Speed 2: Get Ready* report¹⁸, in which the Taskforce recommend that,

“For each HS2 station there needs to be established an ‘HS2 Growth Strategy’ ... to explain how high speed rail will generate local jobs, growth and regeneration.”

6.2 Local partners established the Northern Gateway Development Zone Partnership in 2015 to take on responsibility for developing a Growth Strategy. In March 2017, the organisation was renamed as the Constellation Partnership.

6.3 In 2016, Government confirmed the provision of the first tranche of £625k to support the Constellation Partnership in developing their Growth Strategy. A further £625k was agreed in early 2017 – in line with the funding provided to other HS2 Growth Partnership areas. The Constellation Partnership aims to publish a Growth Strategy later this year which will outline their ambitions for growth that can be achieved through the arrival of HS2 in Crewe, across the Constellation and beyond.

6.4 The Constellation Partnership’s Growth Strategy will aim to deliver a significant number of jobs and homes across the whole area. This will include a package of measures to deliver a highly-connected HS2 sub-region, bringing more places closer together and delivering growth well beyond the tight growth footprint of HS2-station locations.

6.5 To inform business cases for the different Crewe Hub options, the Government has been clear that we are interested in evidence as to (i) the different levels of growth and housing that could be realised with different levels of HS2 service; and (ii) what these different levels might mean for the ability of the local area to contribute to the costs of wider work at Crewe station and/or the options discussed in this consultation.

6.6 Evidence about the impacts beyond the Constellation Partnership’s footprint, e.g. North Wales and the Mersey/Dee area, would also be welcome.

6.7 A Crewe Hub is in Midlands Connect and Transport for the North’s (TfN’s) area of interest, we would be particularly interested in their views as to how a Crewe Hub would best serve the regions.

¹⁸ HS2 growth taskforce: a report to Government on maximising the benefits of HS2 <https://www.gov.uk/government/publications/hs2-growth-taskforce-a-report-to-government-on-maximising-the-benefits-of-hs2>

7. Taking forward proposals for a Crewe Hub

- 7.1 Proposals for a Crewe Hub station are additional to the core HS2 scheme and outside of the current HS2 budget, although the cost of the works in and around Crewe is included in the Phase 2a hybrid Bill estimate of expense.
- 7.2 Network Rail's investment plans for the period beyond 2019 have not yet been determined, although it is highly likely that the signalling in the Crewe area will need to be renewed in the medium term.
- 7.3 The total cost of a Crewe Hub has not yet been estimated, and any future decisions on whether to take forward proposals for a hub will be subject to affordability (including the scale of any local contribution to costs) and value for money.
- 7.4 In supporting the vision for a Crewe Hub, Government has three specific areas of consideration.
 - a. Whether to provide 400m platforms to enable split and join operations on some HS2 services at Crewe. It is likely (but cannot be said with complete certainty until a scheme is confirmed) that such works would be within the boundary of existing railway land
 - b. The provision of a junction connecting the existing network with HS2 north of Crewe would be a decision to be taken alongside the Phase 2b scheme. As part of this decision on the northern junction, we would intend to look at a range of options to secure funding. This consultation asks for views on this issue, including third party contributions. As set out in the 2016 Command Paper, this will need to be considered in the round for affordability and operability given the number of possible additional junctions on HS2 that have been suggested by Transport for the North and Midlands Connect, amongst others
 - c. Whether to develop plans to build on and improve upon the infrastructure works proposed as part of the HS2 Phase 2a hybrid Bill. For example, this could include resignalling and rationalisation of the current layout while safeguarding the future development of local, regional and freight services.
- 7.5 We expect to take decisions about taking forward a Crewe Hub as part of the normal rail investment cycle.
- 7.6 The Government is today setting out its support for a Crewe Hub. It remains the case that the development of a future hub at Crewe includes work to look at a local funding contribution. The local area is already investigating how they might support investment to improve the station buildings at Crewe and we continue to engage with Cheshire East Council on this.

What will happen next

Following the conclusion of the consultation process, DfT will analyse all the responses and use them to inform the development of Crewe Hub and the business cases required.

We will publish a report on the GOV.UK website which will summarise public and stakeholder views.

Paper copies will be available on request.

If you have questions about this consultation please contact:

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London
SW1P 4DR

Phone number (24/7) 08081 434 434 / Minicom (24/7) 08081 456 472.

Email address crewehub@dft.gsi.gov.uk

Further background information can be found at <https://www.gov.uk/dft#consultations>

Annex A: Glossary

Bay platform	A platform at which the rail line terminates and trains cannot pass through
Cheshire East Council	The local authority with Crewe located in its administrative area
Constellation Partnership	Formerly known as the Northern Gateway Development Zone until it was rebranded in March 2017, this is a collaboration between seven local authorities and two Local Enterprise Partnerships. These are Cheshire and Warrington Local Enterprise Partnership; Stoke-on-Trent and Staffordshire Local Enterprise Partnership; Cheshire East Council; Cheshire West and Chester Council; Newcastle-under-Lyme Borough Council; Stafford Borough Council; Staffordshire County Council; Staffordshire Moorlands District Council; and, Stoke-on-Trent City Council
Data Protection Act 1998	Act which controls how your personal information can be used and your rights to ask for information about yourself
Devolved administrations	The Scottish Government, Welsh Government and Northern Ireland Assembly
Environmental Information Regulations 2004	Regulations which provide a statutory right of access to environmental information held by public authorities
Environmental Statement	A summary of an Environmental Impact Assessment accompanying a Bill, setting out the likely environmental effects of the proposed development.
Freedom of Information Act 2000	Act which provides public access to information held by public authorities. Public authorities are obliged to publish certain information about their activities and members of the public are entitled to request information from public authorities
HS2	High Speed 2, the planned high speed rail network from London to the West Midlands and the North
HS2 Ltd	High Speed Two Limited, the company responsible for developing and promoting HS2. An executive non-departmental public body, sponsored by the Department for Transport.

Hybrid Bill	A Bill which combines the characteristics of a public and private Bill and, as such, allows those with a private interest to petition directly to Parliament
Independent lines	Rail lines to the west of Crewe station currently used by freight
Inter-City West Coast Franchise	Rail franchise which runs between London, Birmingham, Manchester, Liverpool, Glasgow, Edinburgh, and Holyhead
Local Enterprise Partnership (LEP)	Voluntary partnerships between local authorities and businesses to lead economic growth and job creation within the local area
Midlands Connect	A collaboration of Local Enterprise Partnerships, Network Rail, Highways England, central Government, local authorities and the business community
Network Rail	The owner and infrastructure manager of most of the rail network and stations in England, Scotland and Wales
Passing loop	A place on a single line railway, often located at a station, where trains travelling in the same or opposite directions can pass each other
Phase 1	First phase of HS2, from London Euston to north of Birmingham, then rejoining the West Coast Main Line. Intended to be operational by 2026
Phase 2a	Accelerated delivery of the section of Phase Two between the West Midlands and Crewe. Intended to be operational by 2027
Phase 2b	Phase of HS2 connecting on the Western Leg to Manchester and on the Eastern Leg to Leeds. Intended to be operational by 2033 (subject to parliamentary approval of the Phase 2b hybrid Bill)
Transport for the North (TfN)	The organisation formed to transform the transport system across the North of England
Train Service Specification (TSS)	How train services are planned on a particular infrastructure
Split and join	Dividing a train into two separate trains serving different destinations and joining them up to form one train again on return from these destinations
West Coast Main Line (WCML)	Current rail network which starts at London and terminates at Edinburgh or Glasgow, serving the West Midlands and North West of England

Annex B: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles. Further information is available at <https://www.gov.uk/government/publications/consultation-principles-guidance>

If you have any comments about the consultation process please contact:

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