



Department
for Transport

HS2

HS2 Phase 2b Western Leg Design Refinement Consultation

Moving Britain Ahead



HS2 Phase 2b Western Leg Design Refinement Consultation

Presented to Parliament
by the Minister of State for Transport
by Command of Her Majesty

October 2020



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CORRECTION SLIP

Title: HS2 Phase 2b Western Leg Design Refinement Consultation CP 288 - VOL1

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Correction:

Text currently reads:

2.129 Compared to Annandale, a stabling facility at Todhills would be more expensive and complex to construct, but would have lower operational costs than Annandale as Todhills is closer to **Glasgow and Edinburgh** meaning empty trains have less distance to travel for service start/end each day. However, Todhills would have greater environmental impacts than a site at Annandale as it is partially located in flood zones 2 and 3. There would also be the need for significant road diversions to create access to the site and potential impacts on community facilities and commercial units. For an option nearer the Scottish border, Annandale was the preferred option.

Text should read:

2.129 Compared to Annandale, a stabling facility at Todhills would be more expensive and complex to construct, but would have lower operational costs than Annandale as Todhills is closer to **Carlisle** meaning empty trains have less distance to travel for service start/end each day. However, Todhills would have greater environmental impacts than a site at Annandale as it is partially located in flood zones 2 and 3. There would also be the need for significant road diversions to create access to the site and potential impacts on community facilities and commercial units. For an option nearer the Scottish border, Annandale was the preferred option.

Month of correction: October

Foreword



The Government is committed to taking forward High Speed Two (HS2) to transform our national rail network, bring our biggest cities closer together, boost productivity and level up opportunity fairly across the country. Work on HS2 Phase One from London to Birmingham is already well underway at over 250 active sites, and we have announced contracts worth around £10bn, for which two thirds will go to small and medium enterprises. Legislation for Phase 2a, from Birmingham to Crewe, is currently being considered by Parliament and we hope for Royal Assent by the end of the year.

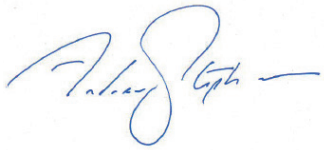
In line with the Oakervee recommendation to deliver HS2 Phase 2b in smaller sections, this consultation deals with four technical refinements to the Western Leg of Phase 2b, from Crewe to Manchester: a newly proposed facility for stabling rolling stock at Annandale in Scotland; changes to the already proposed rolling stock depot at Crewe; expansions to the stations at Manchester Piccadilly and Manchester Airport; and a new Crewe Northern Connection, which would also support the vision for a Crewe Hub. Your responses will inform the design of the railway and the development for the HS2 Phase 2b parliamentary legislation.

The Government has also, however, accepted the Oakervee recommendation that plans for HS2 and other major schemes need to be brought together in an Integrated Rail Plan (IRP) for the North and Midlands.

The IRP will set out the form, scope and phasing of the Phase 2b route, and the Government will therefore consider responses to this consultation alongside the IRP outcomes. If the IRP favours any changes to these elements, such as an underground station at Manchester Piccadilly, further redesign will need to take place. This consultation seeks to ensure that unnecessary delay is avoided in the event that the IRP does not support change.

Restrictions put in place in response to the COVID-19 pandemic mean that we may not be able to hold local information events in the same way that we usually would as part of our formal consultation process. In this case, HS2 Ltd will deliver information events via digital platforms instead. These will allow you the same opportunities to best understand what refinements are being proposed and to ask any questions that you may have to our representatives. Details will be published separately and circulated to local authorities and those who have previously asked HS2 Ltd to keep them informed about events in their area.

Engagement with affected communities is at the heart of our plans for HS2 and it is our commitment to ensure we listen to those affected by these proposals. I look forward to hearing your views on the proposed refinements to the Western Leg of Phase 2b outlined in this consultation.



Andrew Stephenson
Minister of State for Transport

Executive Summary

1. The Government is today launching a national consultation to seek the views of affected and interested parties to allow the Minister of State to make an informed decision on four proposed changes to the Phase 2b Western Leg route.
2. The four proposed design refinements include:
 - A new Crewe Northern Connection and changes to the design of the Crewe North Rolling Stock Depot.
 - Changes to the design around Manchester Airport High Speed Station.
 - Changes to the design around Manchester Piccadilly High Speed Station.
 - The introduction of a new trains stabling facility at Annandale, in Dumfries and Galloway.
3. Further details on each of the proposed refinements are outlined in the next chapter.
4. We will be holding digital information events to support the consultation. Members of the HS2 team will be available at these events to help answer questions about the proposed changes to the scheme and Phase 2b in general. Further details can be found at: www.hs2.org.uk/events.
5. The Minister of State is also today announcing the Government's decisions on the HS2 Phase 2b Design Refinements to the Western Leg that were consulted on in June 2019. The High Speed Two: Design Refinement Consultation Response document is available at: <https://www.gov.uk/government/consultations/hs2-phase-2b-western-leg-design-refinement-consultation>.

1. Introduction

Background

- 1.1 High Speed Two (HS2) is the new high speed railway proposed by the Government to connect major cities in Britain. It will be built in phases. Phase One will see a new high speed line constructed from Euston to the north of Birmingham, where it will join the existing West Coast Main Line (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.
- 1.2 In the November 2015 Command Paper: *High Speed Two: East and West, the Next Steps to Crewe and Beyond*, 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.
- 1.3 In November 2016, the Government published *High Speed Two: From Crewe to Manchester, the West Midlands to Leeds and beyond*. This confirmed the majority of the Government's preferred route for Phase 2b of HS2, completing the full Y network.
- 1.4 In seven areas where the proposed refinements were substantial, the Secretary of State launched a further route refinement consultation in November 2016 to seek the views of communities and other interested parties. In July 2017, the Secretary of State confirmed the full Phase 2b route by taking decisions on the seven areas where proposed route refinements were put forward. The 2017 Phase 2b route decision document can be found at: <https://www.gov.uk/government/publications/hs2-phase-2b-route-decision>
- 1.5 In November 2016, the Government also launched a consultation on property compensation schemes, *High Speed Two Phase 2b Crewe to Manchester, West Midlands to Leeds Property Consultation 2016*. The Government's decisions following this consultation are addressed in a separate document at <https://www.gov.uk/government/consultations/hs2-crewe-to-manchester-west-midlands-to-leeds-property-consultation-2016>

- 1.6 In 2017, the Government launched a consultation on the Crewe Hub. The decisions following this consultation can be found at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/687000/crewe-hub-consultation-response-web.pdf
- 1.7 In October 2018, the Government launched a consultation on the working draft Environmental Statement (ES). The consultation allowed members of the public and organisations to review and comment on preliminary environmental information and evolving design and mitigation. The working draft ES summary can be found here: <https://www.gov.uk/government/consultations/hs2-phase-2b-working-draft-environmental-statement>
- 1.8 The working draft Equality Impact Assessment Report (EQIA) was also consulted on during this time. The assessment considered the potential effects of constructing and operating Phase 2b on groups of people because of their age, disability, gender, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion, belief, sex and sexual orientation. The working draft EQIA can be found here: <https://www.gov.uk/government/consultations/hs2-phase-2b-working-draft-equality-impact-assessment-report>
- 1.9 In June 2019, the Government launched a national consultation to seek the views of affected and interested parties to allow the Secretary of State to make an informed decision on 11 proposed changes to the Phase 2b route. The response to this consultation is available at: <https://www.gov.uk/government/consultations/hs2-phase-2b-design-refinement-consultation>
- 1.10 The Government commissioned Douglas Oakervee to lead a review of the HS2 project in August 2019. The Oakervee Review report was published in February this year and the Government announced its decision to proceed with the project. The Government is committed to Phase 2b of HS2, extending High Speed rail from the West Midlands to the North, ensuring we boost capacity, improve connectivity between our regions and share prosperity. The Oakervee Review is available at: <https://www.gov.uk/government/publications/oakervee-review-of-hs2>
- 1.11 Recognising the importance of East-West connections, the Government has accepted the Oakervee Review recommendation to proceed with an Integrated Rail Plan for the North and Midlands by the end of the year. This will be informed by an assessment from the National Infrastructure Commission, and will set out the form, scope and phasing of Northern Powerhouse Rail, HS2 Phase 2b, Midlands Rail Hub and other Network Rail programmes.

Phase One

- 1.12 Phase One of HS2 will see a new high speed line constructed from London to Birmingham in the West Midlands, where it will connect to the existing West Coast Main Line (WCML). The High Speed Rail (London – West Midlands) Act 2017 gave

Government the powers to construct, operate and maintain the railway within a set of geographical and environmental limits. Early works are underway at sites along the route including the proposed major developments at Euston, Old Oak Common, Birmingham Interchange and Curzon Street.

Phase 2a

- 1.13 Phase 2a of HS2 is a 36-mile stretch of track between the West Midlands and Crewe, brought forward as a hybrid Bill ahead of Phase 2b in order to advance HS2's progress to the North. The hybrid Bill is currently in the House of Lords, and the scheme is expected to be delivered into service alongside Phase One.

Phase 2b

- 1.14 Phase 2b comprises two parts, the Eastern and Western Legs. The Eastern Leg runs from the West Midlands to Leeds with connections to the Midland Main Line and ECML. The Western Leg runs from Crewe to Manchester and will also join the WCML.
- 1.15 The Government is committed to Phase 2b. It allows significant increases in capacity, and transformational reductions in journey times between the Midlands and the North, as well as to London.

Refinement of the Western Leg route

- 1.16 Following the Oakervee Review, the Government has committed to delivering HS2 and preparing an Integrated Rail Plan (IRP) for the North and Midlands. The IRP will look at how to deliver Phase 2b of HS2, Northern Powerhouse Rail (NPR), Midlands Rail Hub and other major rail schemes more effectively and efficiently, maximising the benefits delivered by transport investment in the North and Midlands.
- 1.17 The IRP is being informed by a 'Rail Needs Assessment' undertaken by the National Infrastructure Commission. Whilst this work is ongoing, the Government wants to make progress in bringing forward legislation to take the railway from Crewe to Manchester on the Western Leg as soon as possible. If the IRP favours any changes to these elements, further redesign will need to take place. This consultation seeks to ensure that unnecessary delay is avoided in the event that the IRP does not support change.
- 1.18 The HS2 route from Birmingham to Leeds is also being considered as part of the IRP, and once that work has concluded we will set out next steps on further legislation for this section of route.
- 1.19 HS2 Ltd will continue to refine the Phase 2b route design for the Western Leg hybrid Bill. This is typical of any major infrastructure project and seeks to ensure the Phase 2b design is as efficient, cost effective and environmentally sensitive as it can be.

- 1.20 Where potential changes are identified during the ongoing refinement process, HS2 Ltd follows a procedure of design development appraisal set out in their Route Development Procedure. This ensures that there is a structured and evidence-based approach applied when evaluating proposed changes across HS2. The procedure balances considerations of cost, environmental and community impacts, constructability, business case performance and safety.
- 1.21 In June 2019, the Government launched a national consultation to seek the views of local communities to allow the Secretary of State to make an informed decision on 11 proposed changes to the Phase 2b route.
- 1.22 The Minister of State has published his decisions following the review of the responses received on the Western Leg refinements of the consultation. The response to the consultation can be found at: <https://www.gov.uk/government/consultations/hs2-phase-2b-design-refinement-consultation>. Feedback on the Eastern Leg refinements will be considered as part of the IRP and a separate response to these will be published after the IRP has been finalised.
- 1.23 The Minister of State is now consulting on four further proposed design refinements relevant to a Western Leg hybrid Bill. This Western Leg Design Refinement Consultation is a key milestone on the path leading up to the Phase 2b Western Leg hybrid Bill deposit.
- 1.24 This consultation provides the opportunity for stakeholders to provide their feedback on these proposed changes and allows the Minister of State for Transport to consider the views of interested parties and the public at large before deciding on whether the changes should be included in the Western Leg hybrid Bill.

Northern Powerhouse Rail

- 1.25 The Government is working in partnership with Transport for the North (TfN) on the Northern Powerhouse Rail (NPR) programme, which is designed to transform connectivity and capacity between the key economic centres of the north – including Manchester and its airport, Leeds, Sheffield, Newcastle, Liverpool and Hull.
- 1.26 TfN is the first statutory sub-national transport body. It brings together 20 local transport authorities to enable the North to speak with one voice on transport infrastructure investment needed to drive transformational growth and rebalance the UK economy. The Government is working in partnership with TfN, Network Rail, HS2 Ltd and others to deliver the Government's vision to transform the economy of the north of England.
- 1.27 Featuring a mix of new and significantly upgraded railway lines, the proposed NPR programme is a long-term investment over the next 20 years or more. It aims to transform services across the region and provide the potential for seamless rail travel across cities in the North.

Northern Powerhouse Rail and the Design Refinement Consultations

- 1.28 In October 2017 the Government committed £300m to integrate NPR, Midlands Engine Rail and HS2, thereby reducing the amount of infrastructure required to deliver the NPR network and avoiding disruption to HS2 operation in the future. Following technical design work, over the summer of 2019 we consulted on making passive provision for two junctions between the HS2 Western Leg and a future NPR line towards Liverpool.
- 1.29 The Government has been working with TfN and HS2 Ltd to develop the existing and new interfaces further. While the Government is not yet ready to decide on NPR routes that would connect to these junctions and platforms, it is necessary to make changes to the design of Phase 2b for the Western Leg hybrid Bill to ensure that HS2 infrastructure can be used for NPR services. These changes will allow maximum use of the proposed high speed rail infrastructure, enabling transformative rail connections to be delivered in the North. This will avoid precluding, or making it very expensive for, the NPR route to join and use HS2 infrastructure in the future.
- 1.30 The NPR routes themselves will need to be considered as part of a separate planning, assessment and consenting process. If the Government chooses to proceed with these routes, which are subject to outcomes from the Integrated Rail Plan, the process would include further environmental assessment and consultation, enabling the public to have their say on the emerging design. The designs for these refinements are being consulted upon now to provide the earliest possible opportunity for the public to provide their feedback on the proposed inclusion of these junctions and station changes in the Phase 2b Western Leg hybrid Bill.
- 1.31 By allowing the existing West Coast Main Line to be used in different ways, HS2 will grow the overall capability of the rail network to meet passenger needs in northern towns and cities. This is being integrated into plans for NPR.

Safeguarding

- 1.32 Safeguarding is primarily a planning tool to help protect the land needed for the HS2 scheme from potential conflicting development. Safeguarding is reviewed throughout the project and is updated periodically to reflect new land requirements.
- 1.33 Revised Safeguarding Directions have been issued to reflect the updated design for the Phase 2b Western Leg (with the exception of land in Scotland).
- 1.34 Eligible owners of properties that are within an area which is subject to ‘surface safeguarding’ (i.e. where the route runs on the surface rather than within a deep bored tunnel) have the right to sell their property to the Secretary of State and receive statutory compensation.

- 1.35 More information on safeguarding is available at: <https://www.gov.uk/government/collections/safeguarding-information-and-maps-for-hs2>

Land and property: support to affected property owners

- 1.36 Some of the proposed changes set out in the consultation will mean changes to the land required to build and operate the railway. The impacts on properties resulting from these changes are detailed in the relevant sections of the following chapter. The Government recognises the impacts these proposed changes will have on people who were previously unaffected, and is committed to reducing and mitigating impacts whenever possible as well as regularly engaging with all affected parties.
- 1.37 We know that proposals for new infrastructure can create uncertainty within the property market, which is why the Government has established a package of non-statutory schemes to support affected property owners. These schemes already apply to the Phase 2b Western Leg route and will be adjusted in the event proposed changes to the railway in this consultation are adopted. Affected homeowners and small business may apply for these schemes until a year after the railway is open to the public.
- 1.38 The Need to Sell (NTS) scheme enables property owners along the HS2 route, who meet the scheme's qualifying criteria, to apply to sell their home to the Government if they have a compelling reason to do so. There is no geographic boundary to this scheme.
- 1.39 The NTS scheme is being made available on an interim basis to owners of properties affected by the proposed NPR junctions and locations on which we are consulting, subject to engagement with local residents who are affected by these proposals. In the light of that engagement, we will consider whether any different property support and compensation package is needed in the period until future NPR routes are confirmed. More information on HS2 property compensation scheme is available at: <https://www.gov.uk/claim-compensation-if-affected-by-hs2>

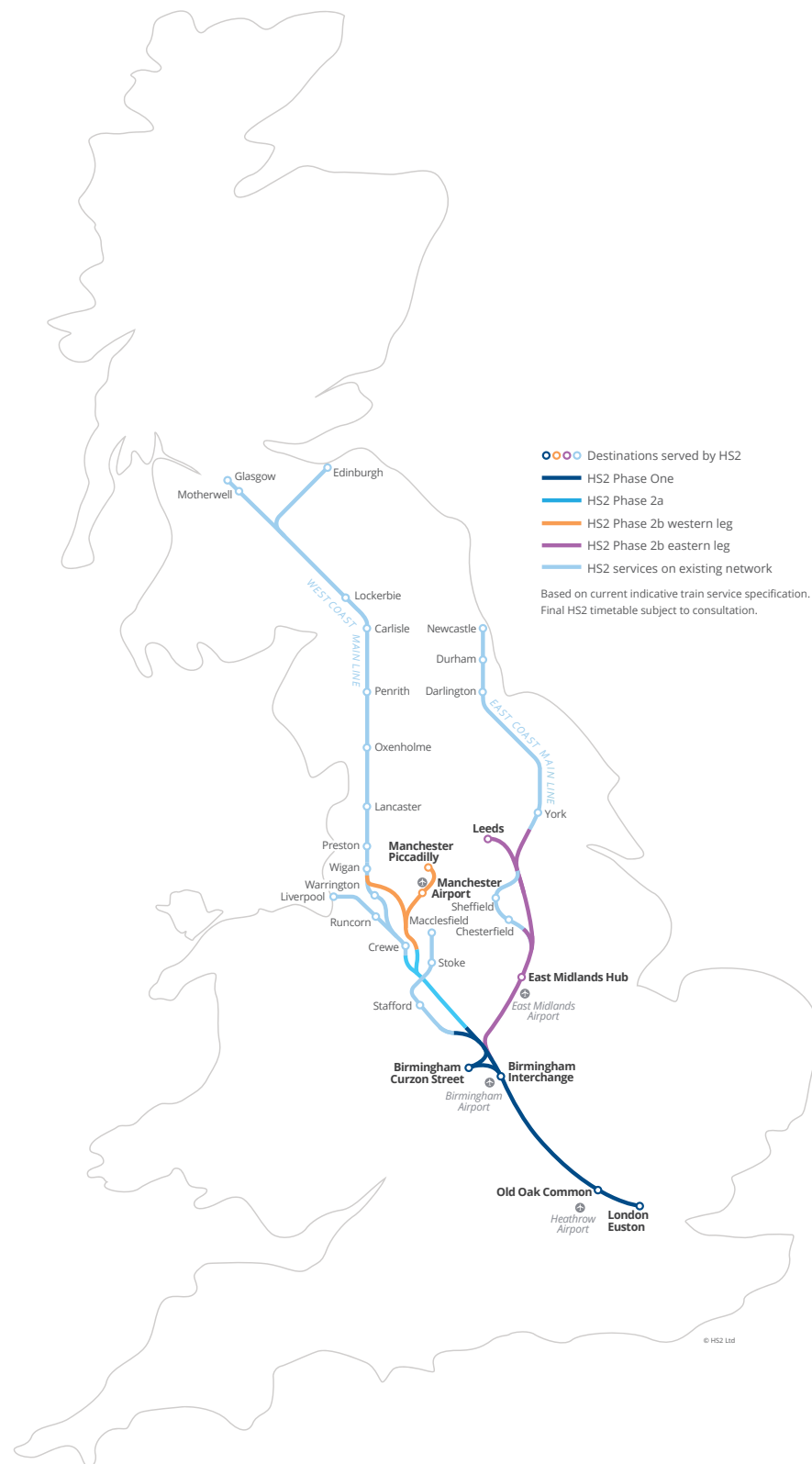


Figure 1: The full HS2 Y network – Existing plans

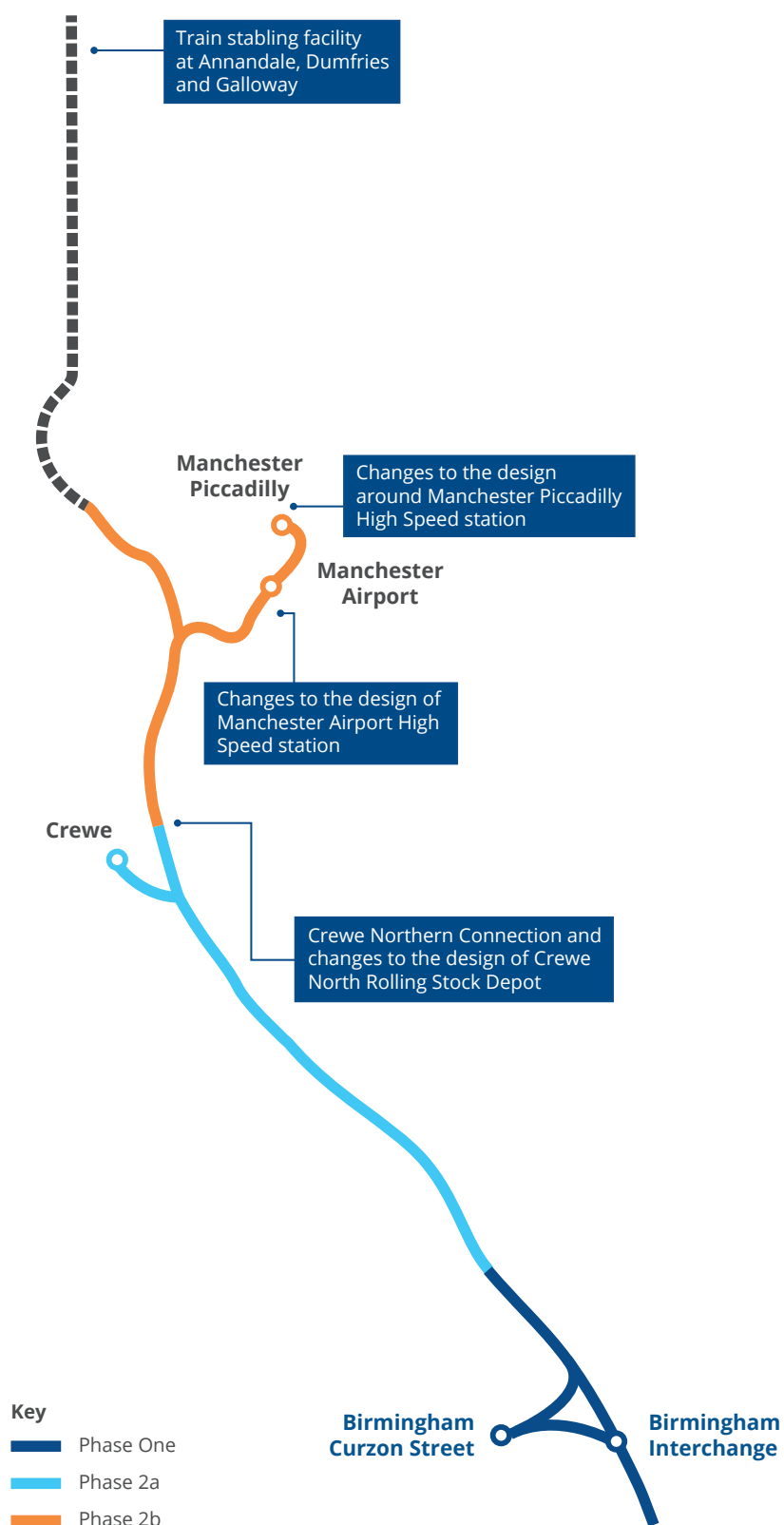


Figure 2: Proposed WLDRC refinements

2. Proposed design refinements and next steps

Introduction to the consultation

- 2.1 The HS2 Phase 2b Western Leg Design Refinement Consultation (WLDRC) will run until 11.45pm on 11 December 2020.
- 2.2 This part of the document provides details of the proposed changes that the Minister of State is minded to include in the design that is submitted to Parliament as part of the Phase 2b Western Leg hybrid Bill.
- 2.3 Following the summary, each proposed change is then described in further detail on pages 18 to 47 and detailed plans for each proposed change can be found in Volume 2 of the WLDRC Mapbook.
- 2.4 How you can respond to this consultation is explained in full on page 49 of this document.
- 2.5 The information contained in this document can also be found online at: <https://www.HS2.org.uk/phase2b>. Copies of this consultation document and the associated response form can also be obtained via the HS2 Helpdesk, the details of which are at the end of this document.

Summary of each of the proposed design refinements

	Proposed design refinement	The Minister of State is minded to
1	Crewe Northern Connection & changes to the design of Crewe North Rolling Stock Depot	Make two changes to the design north of Crewe to: ● include Crewe Northern Connection in the design for HS2 to enable the benefits of NPR and the Crewe Hub to be realised in future with more and quicker services to the North; and ● modify the design of the Crewe North Rolling Stock Depot to provide the required stabling and maintenance facilities for HS2 rolling stock and support the efficient operation of the HS2 network.
2	Changes to the design around Manchester Airport High Speed station	Make changes to the design at Manchester Airport High Speed station to: ● provide two additional platforms (giving a total of four platforms) to accommodate future service growth and the use of HS2 infrastructure as part of Northern Powerhouse Rail; and ● update the designs for provision of a future Metrolink stop at the HS2 station; and ● improve the future road network around the station.

	Proposed design refinement	The Minister of State is minded to
3	Changes to the design around Manchester Piccadilly High Speed station	Make changes to the design around the proposed Manchester Piccadilly High Speed station to: ● provide an additional two platforms (giving a total of six platforms) to allow future use of HS2 infrastructure as part of Northern Powerhouse Rail (NPR); and ● relocate the Piccadilly Metrolink station beneath the HS2/NPR station and make provision for a second Metrolink stop in the event of future expansion of the Metrolink system to the east of the city; and ● make passive provision for the junction required for a future connection to Leeds as part of NPR; and ● change the horizontal alignment of the approach to the station to reduce impacts on the Ardwick train care facility; and ● improve the intended road network around the station to avoid disruption to road users and re-provide highways around HS2 works.
4	The introduction of a new train stabling facility at Annandale, in Dumfries and Galloway	Include a train stabling facility in Dumfries and Galloway (between the A74(M) and West Coast Main Line), to stable and carry out light maintenance on High Speed trains serving the north west of England and Scotland.

Table 1: Summary of each of the proposed design refinements

Crewe Northern Connection and changes to the design of Crewe North Rolling Stock Depot

Community Areas: MA01| Hough to Walley's Green & MA02| Wimboldsley to Lostock Gralam

The Minister of State is minded to make two changes to the design north of Crewe:

- **Include Crewe Northern Connection in the design for HS2 to enable the benefits of NPR and the Crewe Hub to be realised in future with more and quicker services to the North; and**
- **modify the design of the Crewe North Rolling Stock Depot to provide the required stabling and maintenance facilities for HS2 rolling stock and support the efficient operation of the HS2 network.**

Proposed changes to the inclusion of the Crewe Northern Connection

Overview of the current design

- 2.6 In October 2017 the Government undertook a consultation on options which could give Crewe and the surrounding region better access to conventional and high speed services as part of the vision for a hub station. The consultation asked for views on a new junction between the West Coast Main Line (WCML) north of Crewe and the high speed line to Manchester, which along with the right infrastructure could enable additional HS2 services to call at the station.
- 2.7 In its response to the Crewe Hub consultation, the Government noted that a connection north of Crewe could enhance regional connectivity by increasing the number and frequency of High Speed services calling at Crewe than would be the case with just Phase 2a or Phase 2b without Crewe Northern Connection. This could potentially support additional growth not only around Crewe, but across Cheshire and the rest of the North through increased productivity, housing and growth. It stated that HS2 Ltd should continue to develop the design of such a connection.
- 2.8 The current designs for Phase 2a of HS2 allow HS2 services to join the WCML south of Crewe. Trains can then call at the station and travel on from here to destinations such as Manchester, Liverpool and Scotland via the WCML. Services from the North would be able to do the same in reverse.
- 2.9 In the current design for Phase 2b as shown in the working draft Environmental Statement, High Speed services would use Crewe tunnel to by-pass the station and continue on the dedicated HS2 main line to Manchester, Scotland and other destinations further north. Services to Liverpool are assumed to call at Crewe and then stay on the WCML.

- 2.10 The proposal to include a Crewe Northern Connection (CNC) would allow High Speed services from the south to call at an enhanced Crewe Hub Station, and then join the HS2 line to serve destinations to the north of Crewe. This would provide more journey opportunities for passengers and capitalise on the journey time and performance improvements delivered by Phase 2b of HS2 north of Crewe.
- 2.11 Depending on the delivery of Northern Powerhouse Rail (NPR) and other improvements to the WCML, CNC could in future allow between 5–7 HS2 trains per hour to call at Crewe, in line with the vision of a Crewe Hub.
- 2.12 Combined with a potential new NPR line between Hoo Green and Liverpool, the CNC would allow trains to Liverpool to call at Crewe, and then use a future NPR route to Liverpool, rather than the WCML. This would release further capacity on the WCML that could be used for other services and would improve journey times to Liverpool beyond those achieved through Phase 2a of HS2.
- 2.13 A CNC has been strongly supported by Transport for the North and would support Transport for the North's aspirations for improved journey times and connectivity across the North.

Description of the proposed change

- 2.14 The proposed creation of the CNC would require changes to the design of HS2 and the WCML between Parkers Road in Crewe to the south and the River Dane viaduct near Bank Farm to the north. These changes would include realigning a section of the WCML, the inclusion of viaduct structures to connect the WCML and HS2, widening the rail corridor across this area and changes to footbridges and overbridges.
- 2.15 To enable trains to cross between the WCML and high speed lines without having to slow down or stop, the proposed design for the CNC includes a grade-separated junction. This junction would use two viaduct structures to carry the high speed lines over the WCML and connect into the existing north and south bound tracks. These viaducts would be up to 15m above ground level.
- 2.16 The new infrastructure at the CNC would be integrated with the proposed connection between the WCML and Crewe North Rolling Stock Depot. These connections provide access to the depot for trains leaving Crewe station for stabling and maintenance, while also enabling trains stabled at the depot to travel to Crewe station for the start of service.
- 2.17 To safely construct, operate and maintain the CNC, a section of the two outermost tracks of the WCML would need to be adjusted. A 1.7km section of the southbound slow line and a 1.5km section of the northbound slow line would need to be realigned up to 39m to the east and 29m to the west separately. Please see pages 7-28 of the accompanying Western Leg Design Refinement Consultation Mapbook for more details.

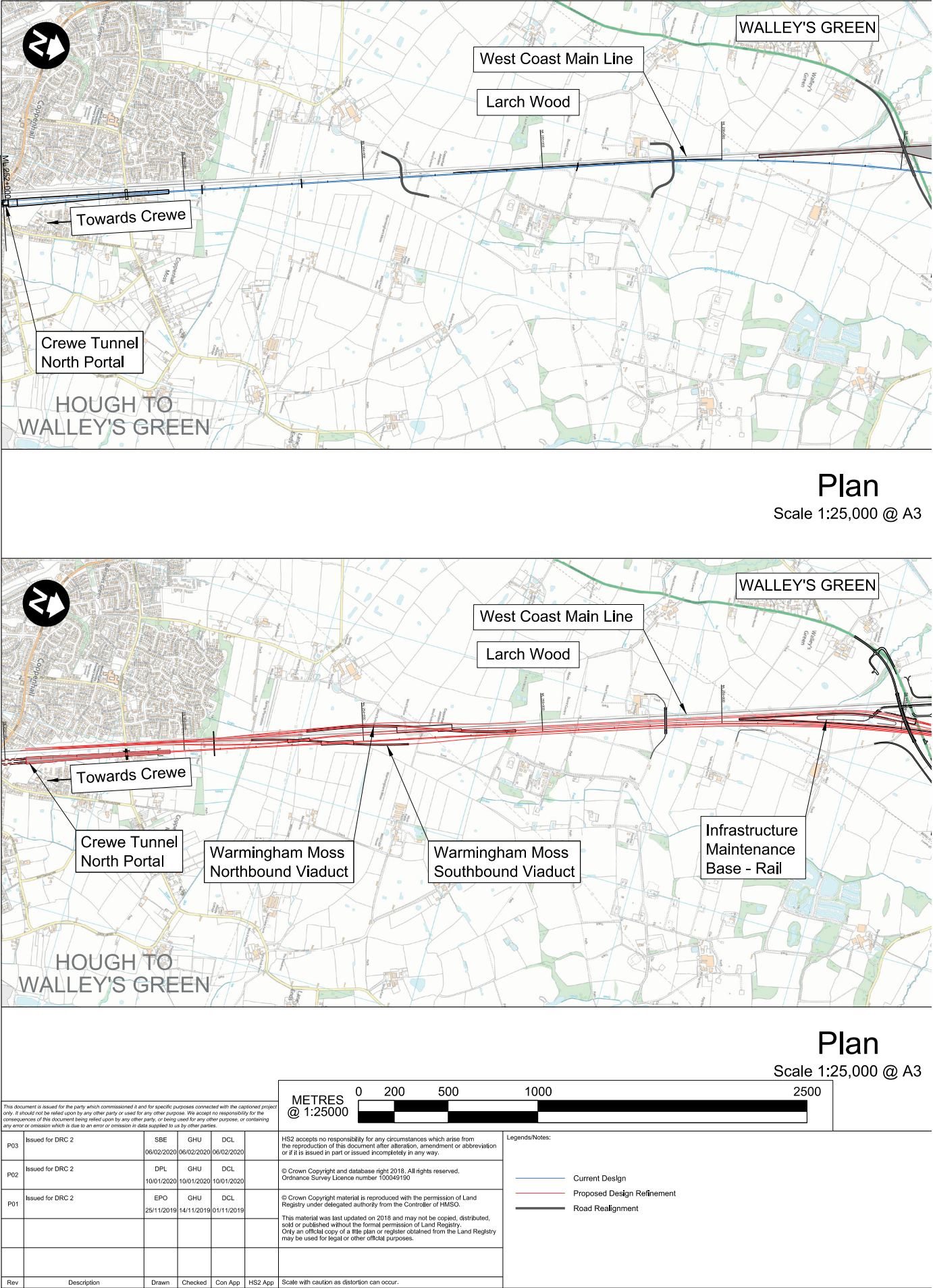
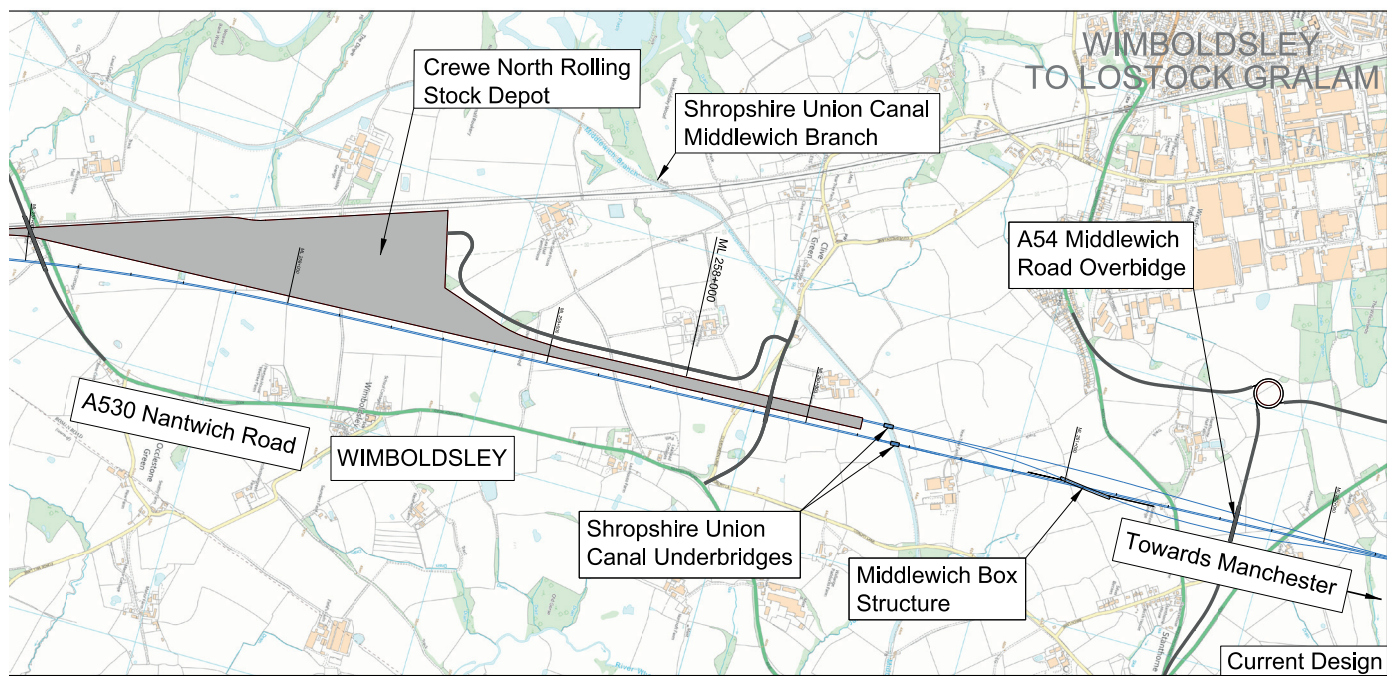
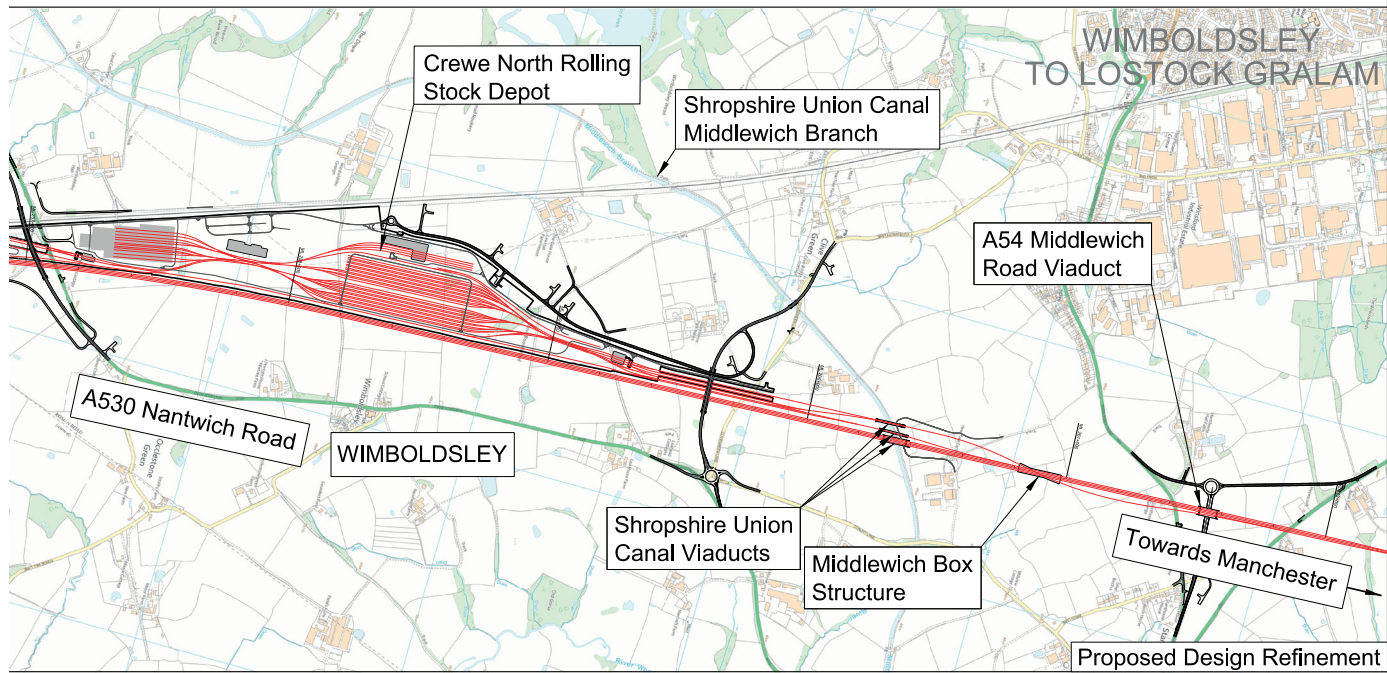


Figure 3: Crewe Northern Connection and Rolling Stock Depot



A3



A3

Fit for Acceptance

HS2 Registered in England Registration No. 06791686 Registered office: 2 Snow Hill, Queensway, Birmingham, B4 6GA Creator/Originator MW JV (Mott MacDonald and WSP Joint Venture)	Zone	Project/Contract		
		CDES Area 1 (CE1)		
	Design Stage	Discipline/Function		
	Hybrid Bill - Interim Preliminary Design	Civil		
	Drawing Title	Drawn	Checked	Approved
M2 Hough to Bamfurlong Crewe Northern Connection & Rolling Stock Depot Chainage 252+000 to 260+000	EPO	GHU	DCL	
	Date	Scale	Size	
	18/10/2019	AS SHOWN	A3	
Drawing No.		Rev.		
2DE01-MW-J-CV-DPL-M002-120001		P03		

- 2.18 The inclusion of the CNC creates a four-track HS2 corridor from Larch Wood near Warmingham Moss up to the southern end of the River Dane viaduct. At the River Dane viaduct, HS2 would return to a two-track corridor.
- 2.19 The CNC also requires changes to the footbridges and overbridges proposed to cross the WCML and HS2 rail corridor. The number of crossings over the Shropshire Union Canal would also increase from two to three viaducts, as an additional structure is required as part of the CNC. The lengths of several proposed culverts and diversions to utility assets in this area would also increase.

Why the Minister of State is minded to make this change

- 2.20 The Minister of State is minded to include the Crewe Northern Connection in the design for HS2 to support the wider strategic vision for Crewe Hub and enhance regional connectivity and journey times to the North.
- 2.21 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process. Ongoing assessment of the environmental impacts and possible mitigations will continue to be made prior to Bill deposit.

Crewe North Rolling Stock Depot

Overview of the current design

- 2.22 The current design (as set out in the working draft Environmental Statement) includes a Rolling Stock Depot north of Crewe between the A530 Nantwich Road and the West Coast Main Line (WCML) near Wimboldsley. The Crewe North Rolling Stock Depot (RSD) would occupy an area of approximately 60 hectares and contain facilities including stabling yards where trains would be stabled overnight, offices and maintenance sheds.
- 2.23 The Crewe North RSD would serve as the operation and maintenance hub for rolling stock on the Western Leg. Activities undertaken at the depot would include light and heavy maintenance, train servicing and interior and exterior cleaning.

Issues identified with the current design

- 2.24 Since the working draft Environmental Statement, further assessment, changes to assumptions about the availability of stabling sites on the existing railway network and changes to assumed train service patterns on the Western Leg, have shown more space would be required at Crewe North RSD to stable and maintain the number of trains required to reliably operate the HS2 network.

- 2.25 The potential inclusion of the CNC and a satellite Infrastructure Maintenance Base-Rail (IMB-R) to the south of the depot, means that the rail connections to and from Crewe North RSD would also need to be revised.

Description of the proposed change

- 2.26 It is proposed that the size of the RSD would increase from approximately 60 hectares to 65 hectares to support the stabling and maintenance of trains.
- 2.27 To connect the Crewe North RSD to the WCML and HS2, changes would be made to the proposed layout of the depot connections. The southbound HS2 tracks into the depot would be carried over the Shropshire Union Canal on a viaduct up to 7.8m high. A box structure (Middlewich Box Structure) that would take the southern reception tracks beneath the HS2 main line and the CNC into the depot would also be included.
- 2.28 The proposed satellite IMB-R, consisting of two 800m sidings, would be included in the design of the scheme just to the south of the main part of the Crewe North RSD. Trains would enter/leave the IMB-R via the depot run-around road and reception tracks.
- 2.29 The IMB-R would be used to stable maintenance trains during the day before they are used to carry out maintenance activities along the route during the planned maintenance window for the railway (between the hours of 24:00–05:00 Monday to Saturday and 24:00–08:00 on Sundays). This smaller satellite IMB-R would work in conjunction with the main IMB-R for the Western Leg at Stone on Phase 2a of HS2. Maintenance activities would be planned and managed from Stone, where maintenance trains would be loaded and dispatched to satellite IMB-Rs at the Crewe North RSD and Ashley. From Crewe North and Ashley, maintenance trains would then be more conveniently placed to make effective use of planned maintenance windows.
- 2.30 It is also proposed that in the construction phase, there would be four temporary construction sidings for loading and stabling wagons and one reception line connected to the WCML. These construction sidings would facilitate the removal of surplus material from Crewe tunnel via rail, avoiding the need to remove this material via the local road network.

Why the Minister of State is minded to make this change

- 2.31 The Minister of State is minded to increase the size of Crewe North RSD to support the stabling and maintenance of trains for the Western Leg.
- 2.32 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

Impact of the proposed changes

2.33 The proposed inclusion of the CNC would have the following potential impacts:

- works to construct the CNC and modifications to the WCML would increase the width of the rail corridor resulting in the permanent loss of habitat from Moss Bridge Marsh and Spring Plantation Grassland Local Wildlife Sites. Construction activities would also result in the temporary loss of grassland habitat in this location;
- the construction of the crossings of the Shropshire Union Canal would lead to the temporary loss of deciduous woodland habitat either side of the canal;
- works to construct the CNC modifications to the WCML would increase the width of the rail corridor resulting in further permanent loss of agricultural land;
- works to construct the extended Crewe footpath overbridge would result in the partial loss of an unnamed woodland east of Moss Lane (west);
- works to construct the CNC would extend the duration of the construction works in Warmingham Moss, resulting in potential additional sound, noise and vibration impacts on nearby residents;
- works to the WCML would lead to disruption to rail users as railway possessions would be required to safely carry out these works;
- residents in the Warmingham Moss area and users of recreational footpaths would experience a substantial visual change during the construction and operation of the CNC. This would noticeably change the landscape within Wimboldsley Plain Landscape Character Area;
- users of the Shropshire Canal Middlewich Branch would notice changes in views during the construction and operation of the additional canal viaduct. This would change the character associated with the canal, restricting longer distance views;
- operational noise and the movement of trains on embankment and viaduct will change the sense of tranquillity associated with the Shropshire Union Canal Middlewich Branch and the setting of historic assets within the landscape; and
- the Warmingham Footpath 16 Accommodation overbridge will no longer be re-provided across the rail corridor. Users of Footpath 16 will be diverted from the north to the south over the Footpath Crewe 29/1 Accommodation overbridge, giving a total length of diversion of 993m.

2.34 There would be several potential impacts associated with increasing the size of the Crewe North RSD and incorporating the IMB-R within that site:

- additional ecological impacts due to the complete loss of Stove Room Wood, further loss of hedgerow and additional permanent loss of agricultural land;
- the larger depot would increase the visual impacts on the nearby farms, Wimboldsley and users of the Shropshire Union Canal Middlewich Branch;
- additional noise and vibration impacts on residents in Wimboldsley, users of footpaths, and local amenities during the operational and construction phases from the depot;
- the larger depot would adversely impact the historic setting of Lea Hall Grade II* listed building and give rise to a visual impact from Stanthorne Park Mews;
- the larger depot would mean a greater visual impact on the Wimboldsley Plain Landscape Character Area, affecting residents in Wimboldsley and users of recreational footpaths during the construction and operational phases; and
- there is likely to be an increase in HS2 related jobs created at the larger rolling stock depot. Some of these employment opportunities would be accessible to residents in the locality.

2.35 No significant change in the potential impacts on Wimboldsley Primary School is anticipated as a result of the changes to the rolling stock depot from the design shown in the working draft Environmental Statement.

Question 1a: What are your comments on the proposals to provide a connection between HS2 and the West Coast Main Line north of Crewe?

Question 1b: What are your comments on the revised proposal for the Crewe North Rolling Stock Depot and the inclusion of an IMB-R at the site?

Changes to the design of Manchester Airport High Speed station

Community Area I MA06 Hulseheath to Manchester Airport

The Minister of State is minded to make three changes to the design at Manchester Airport High Speed station:

- **Provide two additional platforms (giving a total of four platforms) to accommodate future service growth and the use of HS2 infrastructure as part of Northern Powerhouse Rail; and**
- **update the designs for provision of a future Metrolink stop at the HS2 station; and**
- **improve the future road network around the station.**

Manchester Airport High Speed station

Construction of this station and its inclusion in the final scheme remains subject to agreeing an appropriate local funding contribution. We continue to collaborate positively with Greater Manchester Combined Authority, Manchester Airports Group and other Greater Manchester delivery partners on this matter.

Overview of the current design

2.36 In the current design, Manchester Airport High Speed station would occupy land to the west of junctions 5 and 6 of the M56 and Manchester Airport. The station building would be up to 68m wide, 20m high and up to 448m in length. The station concourse would be at ground level immediately above two below-ground platforms and two through lines, which would be in a cutting up to 17m deep and up to 50m wide. As an intermodal interchange station, Manchester Airport High Speed station would also include provision for Metrolink platforms to the north of the station, taxi drop off and pick up bays, private car drop-off and pick-up bays, bus and coach parking bays. Please see pages 29-34 of the accompanying Western Leg Design Refinement Consultation Mapbook for further detail.

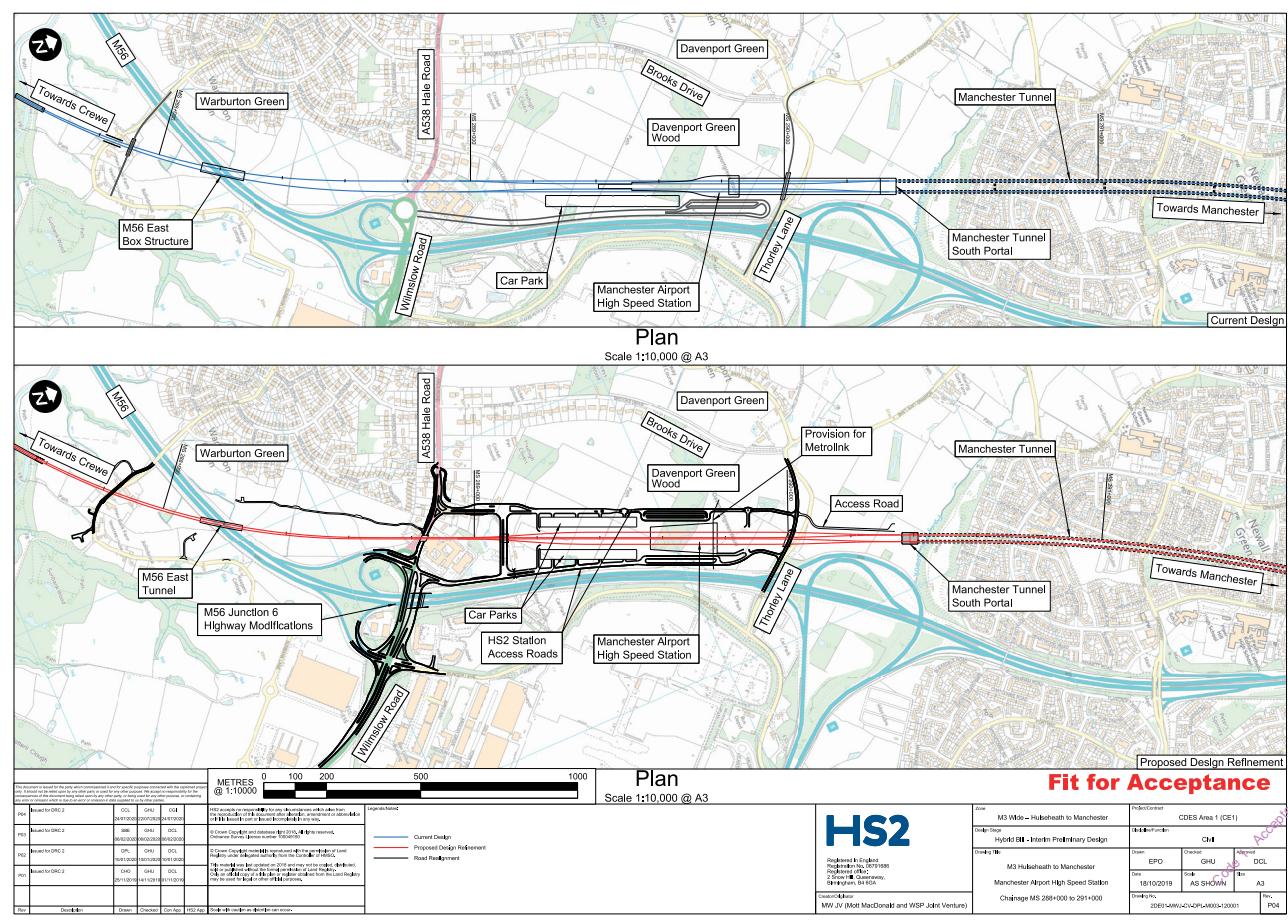


Figure 4: Manchester Airport High Speed Rail station

Description of the proposed changes

- 2.37 Since publishing the Phase Two working draft Environmental Statement in 2018, HS2 Ltd has continued to work with the Department of Transport, Transport for the North and local stakeholders to refine the design of Manchester Airport High Speed station.
- 2.38 The main proposed changes to the design around Manchester Airport High Speed station are:
- increasing the number of platforms at the station from two to four and widening the railway cutting to accommodate these;
 - raising the vertical alignment of the railway in this area, reducing the depth of the cutting at the station;
 - raising the height of the station forecourt on both the eastern and western sides of the station;
 - increasing the overall number of car parking spaces at the station and adding further car parking on the western side of the station;
 - moving the station platforms 60m to the north to integrate HS2 better with any future extension of Metrolink; and
 - including a viaduct structure at the northern end of the station to accommodate a future Metrolink stop.
- 2.39 The purpose of these proposed changes is to improve the integration of HS2 with the wider transport network (including future development of Metrolink), reflect stakeholder feedback on the working draft Environmental Statement design and support a greater number of rail services at the station envisaged as part of Northern Powerhouse Rail (NPR).
- 2.40 To accommodate future NPR services and to facilitate more high speed services per hour calling at Manchester Airport High Speed station, the number of platforms would increase from two to four.
- 2.41 The platforms would remain in a cutting, but the cutting would be shallower and wider with tracks raised from 11m below ground level to 4.5m below existing ground level. Instead of two outer through lines and one inner island platform consisting of two platform faces, the platform configuration would be changed to create two island platforms with four platform faces, and no through lines.
- 2.42 The reduced depth of the cutting would also lead to raising the height of the station forecourt and station buildings by approximately 5m. The size of the station concourse would also increase to accommodate the additional platforms and the anticipated increased number of passengers from future NPR services.

- 2.43 Following ongoing engagement with Transport for Greater Manchester, provision for an elevated Metrolink stop would be integrated into the design of the Manchester Airport High Speed station. This would allow for a future extension of the Metrolink Airport line to be delivered by Transport for Greater Manchester. This could connect the high speed station with Manchester Airport and surrounding communities.
- 2.44 The number of car parking spaces provided at the station has been increased to accommodate the future car parking required for NPR. By providing these car parking spaces now, this would avoid the need to construct these separately in the future.
- 2.45 The collective impact of the above changes at Manchester Airport High Speed station would be that the envelope of land required for the station and associated works would change.
- 2.46 The envelope of land would be 33m shorter compared to the working draft Environmental Statement. It would also be up to 30m above the existing ground level, which is 10m higher than the working draft Environmental Statement design and 32m wider.

Why the Minister of State is minded to make this change

- 2.47 The Minister of State is minded to change the design of Manchester Airport High Speed station to provide for NPR, and to improve connectivity for passengers between HS2, Metrolink and NPR services.
- 2.48 The Minister of State is aware of the potential additional impacts caused by these changes and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered in ongoing design development.

Changes to the road network

Overview of the current design

- 2.49 The working draft Environmental Statement shows a station access road on the eastern side of Manchester Airport High Speed station, connecting to the M56 junction 6/A538 Hale Road roundabout. However, further assessment and engagement with stakeholders has demonstrated the need to make several additional modifications to the roads in this area.

Description of the proposed changes

- 2.50 Hale Road and Hasty Lane would be realigned to accommodate the predicted increase in vehicle numbers generated by HS2 and to provide a second access into Manchester Airport High Speed station. This new access would serve the western side of the station providing access to car parks, car pick up and drop offs and a public transport interchange.

- 2.51 Improvements would be made to junction 6 of the M56 to provide increased capacity. An additional five-lane underbridge below the M56 would be added to the proposed design to manage the predicted traffic volumes and provide improved access under the M56 for pedestrians and cyclists.
- 2.52 Thorley Lane would be aligned across HS2 via a new overbridge and would provide priority access to the station for public transport, emergency vehicles and non-motorised users only.
- 2.53 Further, in this design, increased clearance has been created between HS2 works and the M56 to leave room for potential future highways expansion by Highways England.

Why the Minister of State is minded to make this change

- 2.54 The Minister of State is minded to make this change to the layout of highways around Manchester Airport station to improve access to and from the station.
- 2.55 The Minister of State is aware of the potential additional impacts caused by these changes and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

Impacts of the proposed changes

- 2.56 The proposed changes to the design of Manchester Airport High Speed station and highways in the vicinity are likely to have the following additional impacts to the working draft Environmental Statement design:
 - Increased impacts on habitats and species near Manchester Airport High Speed station during the operational and construction phases as more land will be taken from Timperley Brook and ancient woodland at Davenport Green Wood, which is a Site of Special Biological Interest;
 - different views from Davenport Green across to the site of Manchester Airport High Speed station from those reported in the working draft Environmental Statement. This is due to the increase in width of the station and inclusion of additional car parking spaces on western side. The significance of the impact is considered to be similar to the working draft Environmental Statement;
 - although the change in platform configuration and operational assumptions means that additional HS2 services would call at Manchester Airport High Speed station (and allow NPR services to call there in the future), a result of all HS2 services on the Manchester Spur calling at the station would be to increase the journey time for HS2 London Euston to Manchester Piccadilly services by approximately five minutes;

- one potential additional residential property demolition on Hasty Lane; and
- increased disruption to road users due to proposed construction works at Hale Road and Hasty Lane.

Question 2a: What are your comments on the proposed changes to the design of Manchester Airport High Speed station?

Question 2b: What are your comments on the proposed changes to the road network around the new Manchester Airport High Speed station?

Changes to the design around Manchester Piccadilly High Speed station

Community Areas | MA07 Davenport Green to Ardwick and MA08 Manchester Piccadilly Station

The Minister of State is minded to make a number of changes to the design around the proposed Manchester Piccadilly High Speed station to:

- **Provide an additional two platforms (giving a total of six platforms) to allow future use of HS2 infrastructure as part of Northern Powerhouse Rail; and**
- **relocate the Piccadilly Metrolink station beneath the HS2/NPR station and make provision for a second Metrolink stop in the event of future expansion of the Metrolink system to the east of the city; and**
- **make passive provision for the junction required for a future connection as part of Northern Powerhouse Rail routes east of Manchester; and**
- **change the horizontal alignment of the approach to the station to reduce impacts on the Ardwick train care facility; and**
- **improve the intended road network around the station to avoid disruption to road users and re-provide highways around HS2 works.**

1. Additional platforms at Manchester Piccadilly High Speed station Background

2.57 Finding the right solutions for Manchester Piccadilly has been an evolving challenge.

2.58 In July 2017, the Secretary of State, as part of the *HS2 Phase 2b Route Decision*, confirmed our approach to Manchester Piccadilly, re-aligning the railway eastwards by up to 370m, moving it away from West Gorton. This allowed the approach to Manchester Piccadilly Station to be straightened, maximising operational capacity and reducing the impact on the structure of the existing station.

- 2.59 The site and configuration of the HS2 station in Manchester followed consultation in 2013 and 2017. This work had considered other station sites in Greater Manchester including in the Salford Central and Victoria areas.
- 2.60 In February 2019, TfN published its *Strategic Transport Plan*, following their 2018 consultation. The plan included the ambition for long term development of Northern Powerhouse Rail (NPR) building upon HS2 Phase 2b infrastructure with new integrated stations at Manchester Airport and Piccadilly linking HS2 and NPR.
- 2.61 Building on from TfN's *Strategic Transport Plan*, HS2 Ltd has worked with TfN, its partners and the Department for Transport (DfT) to review alternatives that would allow NPR and HS2 services to use the HS2 route from Manchester Airport to Piccadilly. These options have included alternative configurations of surface 'terminal' stations, together with options for underground 'through' stations. HS2 Ltd has recommended that the surface station concept meets the requirements set. This consultation is focused on the surface station option, but the IRP will make the final recommendation between the surface and underground station, and the Government will therefore consider responses to this consultation alongside the IRP outcomes. If the IRP supports any changes to these elements, such as an underground station at Manchester Piccadilly, further redesign will need to take place.
- 2.62 In developing this plan the Minister of State has been mindful of
- the need to accommodate proposed HS2 and NPR services, including four trains per hour between Liverpool and Manchester and six trains per hour between Manchester and Leeds for NPR;
 - ensuring that the station is also future-proofed against scenarios which could include higher levels of NPR service;
 - ensuring that the station can operate in a resilient manner in times of service disruption;
 - the desire to minimise impact on Manchester City Council's Strategic Regeneration Framework plans for the redevelopment of land north of Sheffield Street; and
 - ensuring the ease of passenger interchange between HS2, NPR and national rail services.
- 2.63 The Government is committed to delivering the right solution for Manchester Piccadilly High Speed Station which is why we are now consulting on a combined station with additional platforms for key NPR services.

Overview of the current design

- 2.64 In the current design Manchester Piccadilly High Speed station would be a terminus station occupying land from St Andrews Street in the east, to Ducie Street in the west, and joined to the existing Manchester Piccadilly station. Manchester Piccadilly High Speed station would be approximately 445m in length and approximately 50m in width. The platforms would be arranged with one island platform and two edge platforms for further details.
- 2.65 The station would be constructed on two main levels. At platform level, a new combined entrance to the existing Manchester Piccadilly station and the proposed Manchester Piccadilly High Speed station would be provided. Passengers entering the station would either go forward for national rail services, or take the lift/escalator down to a lower concourse level for High Speed services. The lower concourse level would provide access to four new platforms and would lie beneath them, with access from New Sheffield Street, on the north side of the Manchester Piccadilly High Speed station.

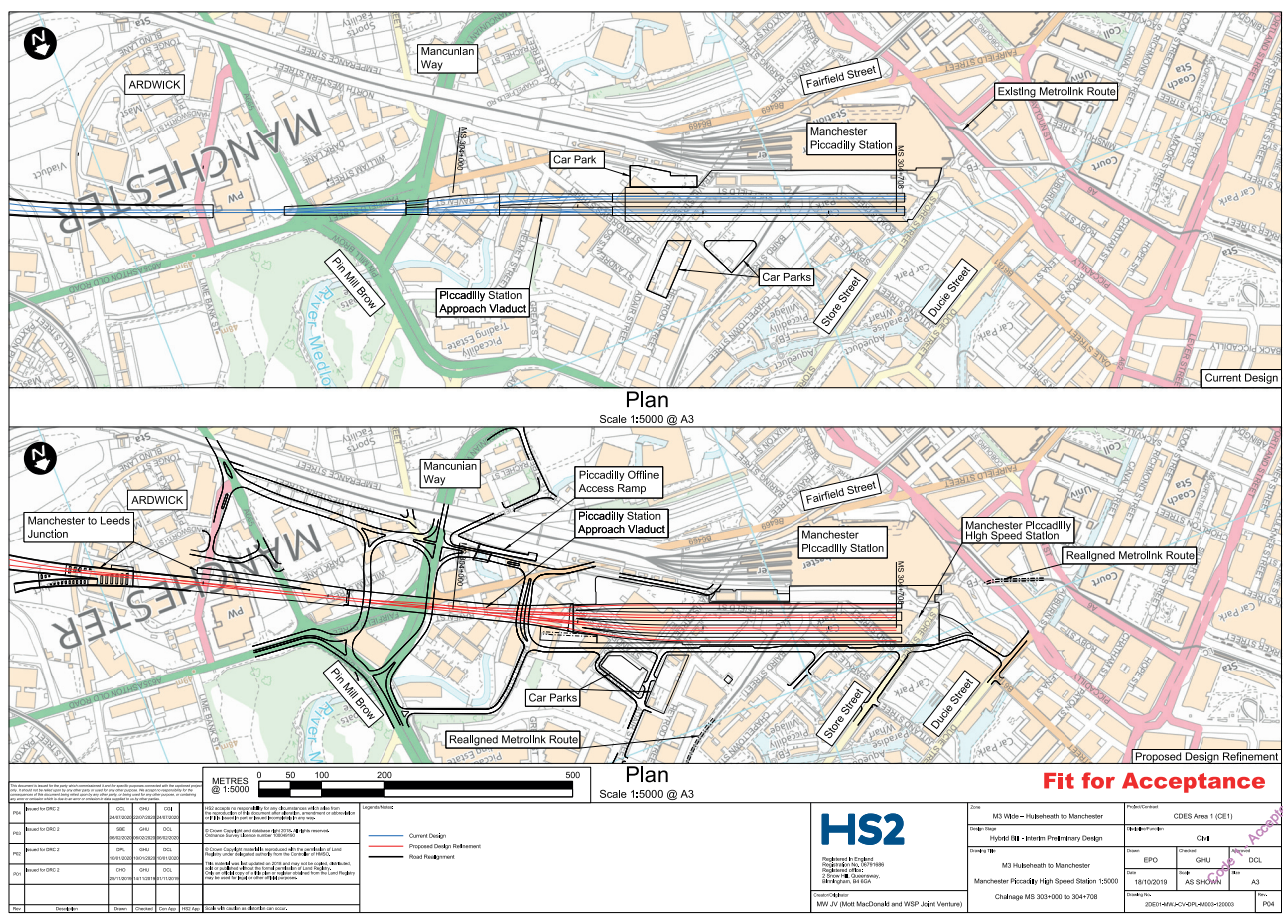


Figure 5.1: Manchester Piccadilly High Speed Rail station (highways)

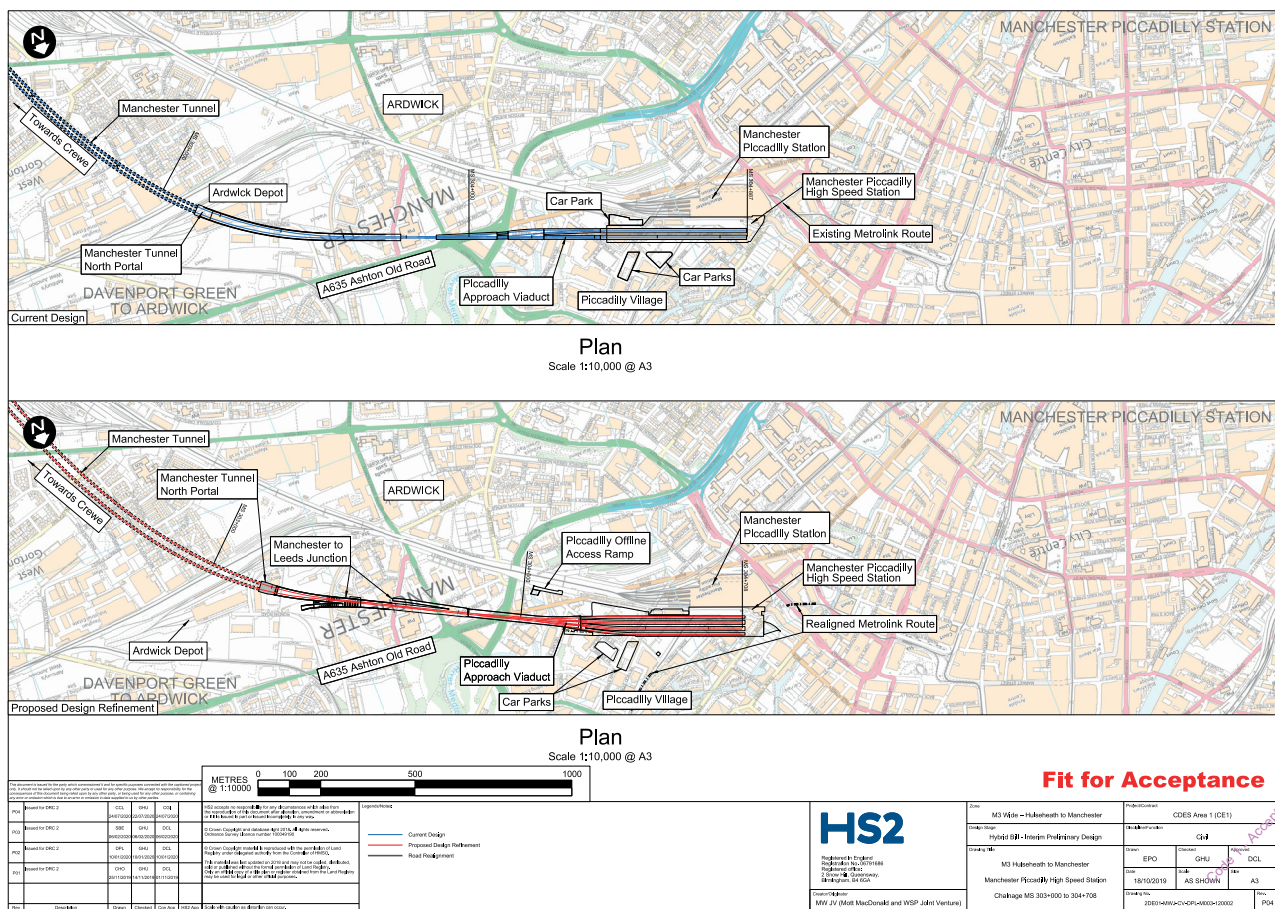


Figure 5.2 Manchester Piccadilly High Speed Rail station (Excluding highways)

Description of the proposed changes

- 2.66 As part of futureproofing the HS2 network for NPR services, the Minister of State is minded to increase the number of platforms at Manchester Piccadilly High Speed station and change their configuration.
- 2.67 To accommodate the proposed number of HS2 and NPR services, the platform layout would be arranged with three island platforms, increasing the number of platforms at Manchester Piccadilly High Speed station from four to six.

Design refinement options

- 2.68 HS2 Ltd considered two options for the reconfiguration of Manchester Piccadilly High Speed Station to achieve this increase in platforms. The first option was for two side platforms (9.5m wide) and two island platforms (13m wide), as shown in Figure 6.1 below. The total width of the station with this platform configuration would be approximately 70m.

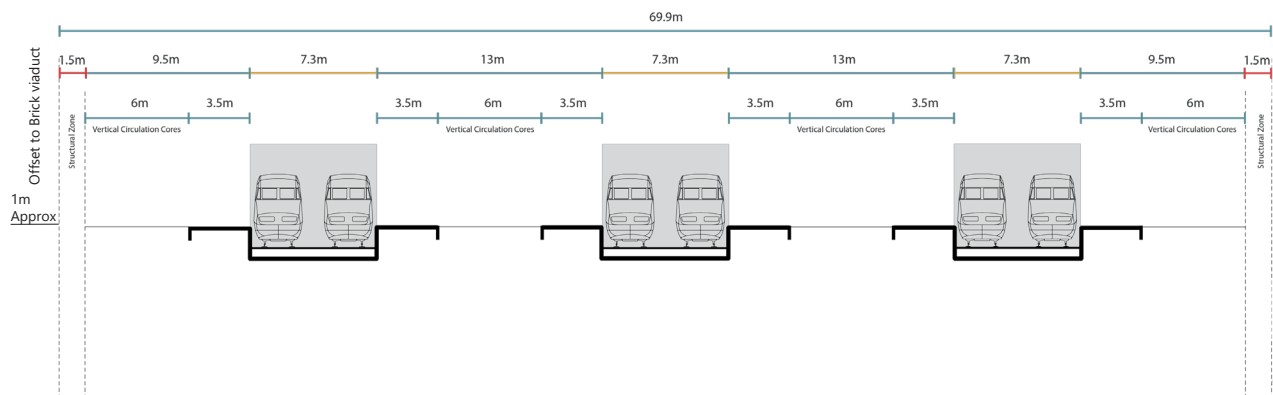


Figure 6.1: Option 1 – section showing two side and two island platforms

2.69 The second option for accommodating additional platforms was a three island platform configuration (each island platform being 13m wide) as shown in Figure 6.2 below. The total width of the station with this platform configuration would be approximately 65m.

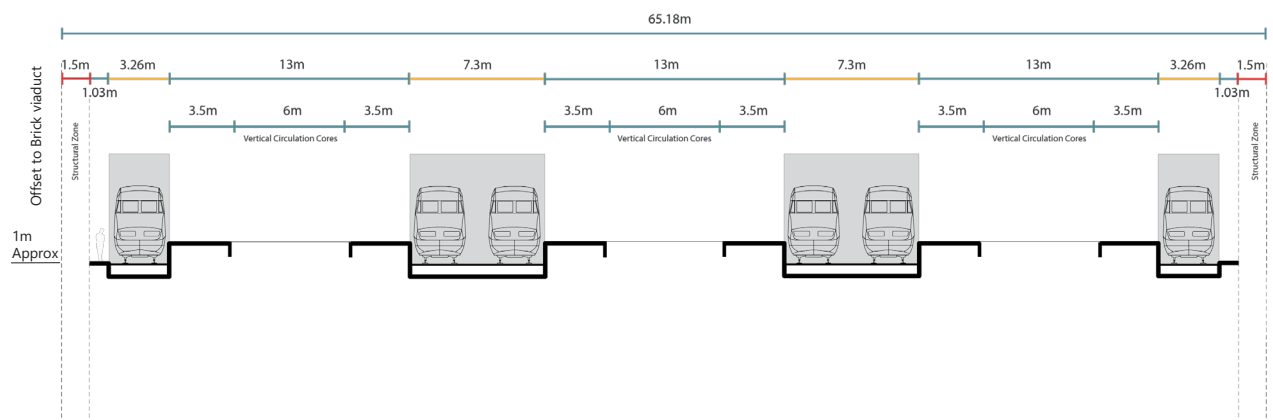


Figure 6.2: Option 2 – section showing three island platform configuration

2.70 Option 1 with two island and two side platforms would result in a wider overall station than either the current design or Option 2. Although both Options 1 and 2 would take some space available for the New Sheffield Street Boulevard, which is a key part of the Manchester Piccadilly Strategic Regeneration Framework, Option 1 would take more space from it than Option 2.

2.71 The aspiration set out in the Piccadilly Strategic Regeneration Framework for New Sheffield Street Boulevard is for a wide, open, streetscape. Both Option 1 and Option 2 would mean that the extra width of the station would create a narrowing of the Boulevard between the station and Chapeltown apartments. To achieve the open Boulevard effect, it is likely that Option 1 would require the demolition of Chapeltown apartments. This would be avoided under Option 2.

- 2.72 Option 2 would lead to Manchester Piccadilly High Speed station having a narrower and smaller station footprint. However, under this option Piccadilly viaduct on the approach would be wider than in Option 1. This additional width at Piccadilly viaduct is necessary in order to fit the switches and crossings for the platforms and the approach tracks. Option 2 would have an additional approach track to Option 1, requiring five tracks to operate instead of 4 tracks under Option 1. This would lead to the total width of Piccadilly viaduct being approximately 10m wider than for Option 1.
- 2.73 The additional approach track and platform layout in Option 2 would make Manchester Piccadilly High Speed station more resilient for the operation of HS2 and NPR services. The layout in Option 2 would allow NPR and HS2 services to access any of the platforms at the station, rather than operating from designated platforms as per Option 1. This would support the reliability of both the HS2 and NPR networks by maximising operational flexibility in times when services may be disrupted.
- 2.74 Further, the layout in Option 2 provides more operational flexibility and does not preclude future growth in NPR passenger services because it significantly lowers the potential for conflicting train movements between NPR and HS2 services on the approach to Manchester Piccadilly High Speed station when compared to Option 1.
- 2.75 Under both options, there is likely to be construction phase impacts to residential properties in the vicinity and further construction traffic on top of existing traffic in the city centre. During the operation of the railway, it is likely that both options would have an impact on habitats within and around the Rochdale and Ashton Canals. Work will continue to minimise these impacts via design development and the inclusion of suitable mitigation. However, the smaller station footprint under Option 2 would have a lower permanent landscape impact than Option 1 and would have greater potential to create areas of the public realm around the station.
- 2.76 Following consideration of the two options, Option 2 was selected as the preferred option due to its lower impact on the Strategic Regeneration Framework, its operational benefits, its lower cost and reduced impacts.

Why the Minister of State is minded to make this change

- 2.77 The Minister of State is minded to make this change to integrate HS2 with a future NPR network. As part of futureproofing the HS2 network for NPR services, the Minister of State is minded to increase the number of platforms at Manchester Piccadilly High Speed station and change their configuration. The platforms could be used by both HS2 and NPR services, providing greater operational flexibility and the opportunity to improve reliability on both networks by providing more platform options for services at times of disruption.
- 2.78 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

2. Metrolink

Overview of the current design

- 2.79 At the existing Manchester Piccadilly Station, there is a two-platform Metrolink tram stop at street level in the undercroft of the rail station, next to the short-term Piccadilly Station car park. This stop is referred to as Piccadilly Tram stop. Tram services from Piccadilly Tram stop continue to Ashton and Etihad Campus in one direction and Altrincham, Bury, Eccles and Media City in the other.
- 2.80 In the design for Manchester Piccadilly High Speed Station shown in the working draft Environmental Statement in 2018, HS2 Ltd proposed only minor alterations to the accesses for the existing Piccadilly Tram stop.

Description of the proposed change

- 2.81 Transport for Greater Manchester has a long-term aspiration to expand the Metrolink network around Greater Manchester, including running trams and 'tram trains' to new destinations east of the city. Greater Manchester stakeholders also have aspirations to improve access for pedestrians underneath the existing Piccadilly Station and ensure the proposed Manchester Piccadilly High Speed Station facilitates easy access between major redevelopment sites in the city's Manchester Piccadilly Strategic Regeneration Framework.
- 2.82 Greater Manchester partners have confirmed that they are prepared to prioritise the funding of the local proposals for Metrolink underground at Piccadilly in future funding rounds. This will form part of the shared programme between DfT and Greater Manchester in implementing the Manchester HS2 Growth Strategy. In the 2020 budget, Government made £4.2bn of funding available to eight city regions for intra-city transport initiatives over the period 2022/23 to 2026/27.
- 2.83 To support these aspirations for enhanced access and provide effective interchange between conventional rail services, High Speed rail services and Metrolink at Manchester Piccadilly Station, several changes are proposed to the layout of Metrolink as it exists today and to the layout shown in the working draft Environmental Statement. Transport for Greater Manchester has investigated several alternative designs for Metrolink at Manchester Piccadilly High Speed station. The changes set out here represent their preferred option.
- 2.84 Part of these proposed changes would see the existing Piccadilly Tram stop relocated underground, beneath the new High Speed Station. Piccadilly Tram stop would also change from a two-platform to a four-platform stop. In order to integrate the relocated Piccadilly Tram stop with existing Metrolink tracks, these tracks would be realigned. At the western end of the existing Manchester Piccadilly Station, it is proposed that Metrolink would be realigned from Piccadilly Place across London Road, under Gateway House and Station Approach, across Store Street and underneath the High Speed Station, before calling at the relocated Piccadilly Tram stop. From this relocated

Piccadilly Tram stop, Metrolink tracks would run beyond the High Speed Station in a cut-and-cover tunnel to the north east, where it would gradually rise back to ground level between New Sheffield Street and Great Ancoats Street, then re-join the existing Ashton and Etihad Campus line.

- 2.85 Further, it is proposed that provision is made for another, new, Metrolink stop at the eastern side of the High Speed Station. This new tram stop would be known as Piccadilly Central and would have space for two-platforms. It is proposed that the hybrid Bill for the Western Leg of HS2 includes a spur from the Metrolink tracks beneath the high speed platforms to serve a Piccadilly Central tram stop that would be built in the future.
- 2.86 The platforms, mechanical and electrical works and works beyond Piccadilly Central tram stop would be delivered and funded by another organisation in future. There are aspirations that ‘tram-train’ services from Piccadilly Central continue to the east of Piccadilly Station towards the Guide Bridge railway corridor. Again, the works necessary to realise these aspirations would be delivered under a separate consenting process, but the new spur included in the HS2 hybrid Bill would facilitate this. Prior to any potential tram-train extension, the new spur will provide turnback facilities for tram services which terminate at Piccadilly, to replace the existing turnback facility on Sheffield Street that would be removed in order to construct Manchester Piccadilly High Speed station. In line with the process set at Birmingham, Government’s expectation is that funding for this will ultimately come from the budget provision made for local transport in Manchester.

Why the Minister of State is minded to make this change

- 2.87 The Minister of State is minded to make this change to facilitate Transport for Greater Manchester’s aspirations to extend the Metrolink network.
- 2.88 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

3. Passive provision for a Manchester to Leeds Junction

Overview of the current design

- 2.89 As part of futureproofing HS2 for a potential NPR network, the Minister of State is minded to include passive provision for a Manchester to Leeds junction. This junction would facilitate a future Manchester to Leeds connection from HS2, allowing NPR services to travel beyond Manchester to Leeds.
- 2.90 Passive provision refers to the minimum works required in the Phase 2b Western Leg hybrid Bill to avoid disruption to the operation of HS2 when constructing the junction fully in future.

- 2.91 It is proposed that passive provision for this junction would include civil engineering structures and earthworks in the Ardwick area on the approach to Manchester Piccadilly High Speed station.

Description of the proposed changes

- 2.92 Passive provision would require the construction of an embankment to the south of the HS2 Manchester Spur across the A665 Midland Street at a height of approximately 4.5m and a box structure approximately 5m high to be constructed across the HS2 main line near Rondin Road.
- 2.93 The future Manchester to Leeds line would cross over the Manchester Spur near Ardwick at a height of approximately 9m.

Why the Minister of State is minded to make this change

- 2.94 The Minister of State is minded to make this change as provision for potential connections between the planned HS2 network and proposed NPR network at this stage in the design process is more efficient and cost-effective and will have a reduced environmental impact compared with incorporating such changes at a later date.
- 2.95 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

4. Ardwick depot

Overview of the current design

- 2.96 In the current design, the Manchester spur enters a twin-bored tunnel in the Davenport Green area. The tunnel would be approximately 13km long and emerge in the Ardwick area (Community Area MA07 Davenport Green to Ardwick) at the current carriage sheds of the Siemens Ardwick train depot.
- 2.97 From here, the Manchester spur would continue north in a retained cutting approximately 130m in length, 18m wide and 0.5m deep and then onto a viaduct before reaching Manchester Piccadilly High Speed station.

Issues identified with the current design

- 2.98 The location of the north portal of the Manchester tunnel would require the demolition of the carriage sheds, as well as the reconfiguration of the rest of the Ardwick depot. This depot is essential for stabling trains operating into and out of Manchester Piccadilly and therefore a key part of the Northern transport network.
- 2.99 Given the importance of this depot, any option would need to be fully operational before the existing carriage sheds were demolished and tunnelling works for HS2 could begin to avoid disruption to rail services.

- 2.100 The need to remodel or re-provide these facilities ahead of the main HS2 construction phase would increase the length of the construction programme for HS2 and introduces an additional capital cost.
- 2.101 Alongside the capital cost and construction programme impacts, the demolition of the existing carriage shed, and reconfiguration of the site would potentially have noise, air, landscape and visual impacts on commercial properties in the vicinity, as well as neighbouring residential properties.
- 2.102 If a new site were required for some or all of the facilities currently at the Ardwick train care facility, the construction of these new facilities would transfer construction and operational impacts to a new area and community. Depending on the site that was selected, it would potentially introduce operational noise, landscape and visual impacts in this area.

Design refinement options

- 2.103 Consideration has been given to alternative locations for the Manchester tunnel north portal that would avoid a number of the major impacts on Ardwick train care facility associated with the current design, particularly allowing it to retain its existing layout and location.
- 2.104 Two potential locations were identified for the north portal. The first option would avoid the need to relocate the facility by moving the Manchester tunnel north portal approximately 180m to the east. The second option would avoid the need to relocate the facility by moving the Manchester tunnel north portal approximately 120m to the west.
- 2.105 The first option was not pursued as, compared to the second, it increased the overall length of the Manchester tunnel and with it the length of the construction programme and capital cost. This increase in length to the Manchester tunnel also would result in the need for an additional vent shaft between the fourth vent shaft currently at Birchfields Road and the Manchester tunnel north portal. This intermediate vent shaft would be required to maintain a safe working distance for the Fire Services in the rare event of an emergency in the Manchester tunnel. The need for an additional vent shaft would introduce new impacts at the surface above the tunnel at an otherwise unaffected location and reduce the size of the potential capital cost saving compared to the second option.
- 2.106 The portal for the second option would be located on the west side of Rondin Road, in the area of land currently occupied by a metal recycling company but beyond the Ardwick facility. This option avoids several of the disadvantages of the first option. This option requires the realignment of the Manchester Spur and would potentially lead to the demolition of nine additional commercial properties compared to the working draft Environmental Statement, including the Manchester City Council depot off Hooper Street.

Why the Minister of State is minded to make this change.

- 2.107 Having reviewed the options, the Minister of State is minded to select the second option, moving the tunnel portal 120m to the west. The tunnel portal would no longer impact on the train care facility, removing the need to relocate the train maintenance and stabling facilities without removing the need for an additional vent shaft.
- 2.108 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

5. Changes to the road network

Overview of the current design

- 2.109 The design shown in the working draft Environmental Statement did not show alterations to the road network around the vicinity of Manchester Piccadilly High Speed station. However, further work has demonstrated the need to make modifications to the roads in this area.
- 2.110 This is primarily due to clearance issues caused by the Piccadilly approach viaduct, severance of highways caused by provision for the proposed Manchester to Leeds junction and further design development around the station building.

Description of the proposed changes

- 2.111 It is proposed that the triangular shaped junction of A665 Pin Mill Brow, A665 Chancellor Lane, A635 Ashton Old Road, A635 Mancunian Way and A635 Fairfield Street be realigned to form a gyratory system. The A665 Chancellor Lane would be realigned so it runs broadly parallel to the existing Network Rail Crewe to Manchester Line viaduct. Midland Street would remain open for local access, but it would no longer serve as a through route between A665 Chancellor Lane and A635 Ashton Old Road.
- 2.112 Local access would be maintained to the part of North Western Street which is located to the east of A635 Mancunian Way. The part of North Western Street which is located to the west of A635 Mancunian Way would be closed to provide a new Network Rail access ramp for vehicle access to the Network Rail viaduct. This new access is required because the existing access from Ducie Street is severed by the proposed Manchester Piccadilly High Speed station. The Network Rail access ramp would be accessed via Chapelfield Road.
- 2.113 In order to provide a new road along the north side of Manchester Piccadilly High Speed station, roads and junctions in the vicinity would be modified including Helmet Street, Adair Street, Travis Street, Sheffield Street, Baird Street, Boad Street, Store Street, Chapeltown Street, Heyrod Street, St Andrew's Street and Ducie Street.

2.114 These works are necessary to re-provide the existing highway network, which would otherwise come into conflict with the infrastructure due to be included in the Western Leg hybrid Bill.

2.115 The design proposed here is compliant with normal design standards for urban roads, based on the current projection of future traffic growth. HS2 Ltd continue to assess the opportunity to adopt a smaller scale scheme. This would depend on complimentary measures that limit the overall level of traffic in the immediately surrounding area. This would require formal assurance from the relevant highway authorities.

Why the Minister of State is minded to make this change

2.116 The Minister of State is minded to make changes to the proposed road layout around Manchester Piccadilly High Speed station to avoid disruption to road users and provide highways around HS2 works.

2.117 The Minister of State is aware of the potential additional impacts caused by this change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered throughout the design development process.

Impacts of all changes to the design around the proposed Manchester Piccadilly High Speed station

2.118 The changes proposed are likely to have additional impacts when compared to the current design. These are:

- approximately eight potential additional commercial demolitions predominantly on Dark Lane due to the highway changes surrounding Manchester Piccadilly High Speed station;
- additional commercial demolitions as a result of realigning the Manchester tunnel to avoid Ardwick train care facility;
- during construction the works to the road network around the station will impact on traffic movements in the area, causing some disruption to local residents and businesses;
- greater socio-economic, community, landscape and visual impacts due to the increased width of the station and surrounding highway changes during construction;
- disruption to Metrolink services during the construction phase due to the need to realign sections of Metrolink and relocate trams stops;

- modifying and adding to permanent structures in areas around the Manchester to Leeds junction, specifically earthworks and structures to support future lines, leading to increased landscape and visual impacts;
- more permanent land take required to provide the Manchester to Leeds junction; and
- an increase in construction vehicles using roads around the junction in order to build passive provision for the Manchester to Leeds junction, with potentially increased air quality, sound, noise and vibration impacts.

2.119 The Minister of State is aware of the potential additional impacts caused by these changes and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered in ongoing design development.

Question 3a: What are your comments on the inclusion of two additional platforms into the design of Manchester Piccadilly High Speed station?

Question 3b: What are your comments on the proposed changes to Metrolink around Manchester Piccadilly High Speed station?

Question 3c: What are your comments on the proposed inclusion in the design of passive provision for a future Manchester to Leeds junction?

Question 3d: What are your comments on the proposed relocation of the Manchester tunnel portal to avoid the need to demolish the train care facility at Ardwick Depot?

Question 3e: What are your comments on the proposed changes to the road network around the new Manchester Piccadilly High Speed station?

The introduction of a new train stabling facility at Annandale, in Dumfries and Galloway

Community Area: Off-route

The Minister of State is minded to include a train stabling facility at Annandale, Dumfries and Galloway to stable and carry out light maintenance on High Speed trains serving the north west of England and Scotland.

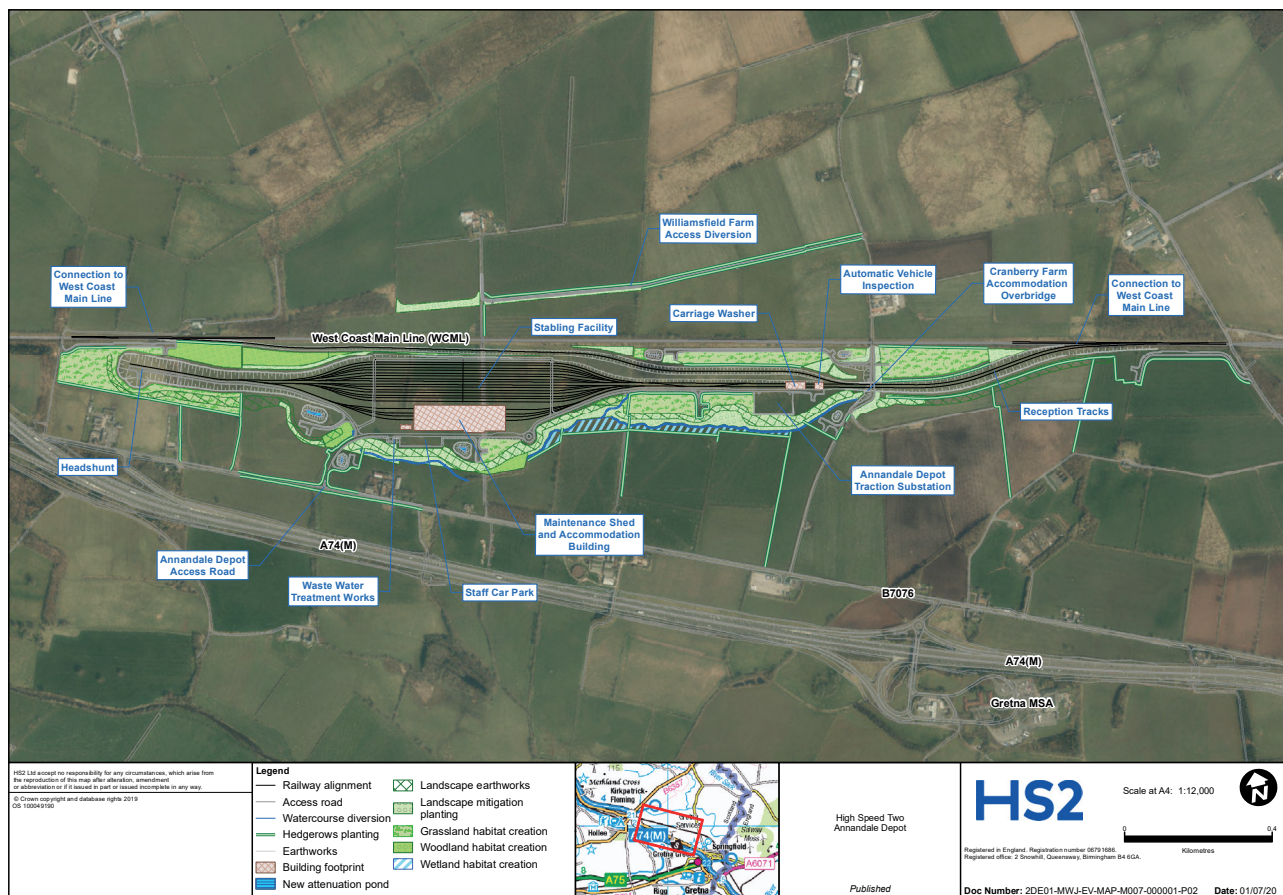


Figure 7: Annandale Depot

Introduction

2.120 Phase 2b will provide an increased number of services to Scotland and North West England compared to Phase 2a or Phase One of HS2, with two 400m trains running from Euston each hour and splitting at Carlisle into two 200m trains to serve Glasgow and Edinburgh. HS2 trains will also serve Scotland from Birmingham. New HS2 trains serving Scotland and the north west of England will need overnight stabling and light maintenance in this area, near to where trains finish and start service. It would not be operationally efficient for these trains to run empty to the next closest HS2 depot north of Crewe, approximately 150 miles away.

Identification of the proposed site

2.121 To support the efficient operation of HS2 additional train stabling facilities are required somewhere in the area between Carlisle, Glasgow and Edinburgh.

2.122 For a site to be potentially suitable for stabling HS2 trains in this search area, it needs to meet the following requirements:

- be close to the existing railway;
- be a relatively large, flat site;
- preferably a brownfield rather than greenfield site;
- located as close as feasible to where HS2 services will terminate or begin to minimise empty train movements;
- be accessible to the workforce and local transport network;
- be suitable for 24-hour working;
- have enough space to accommodate equipment for light maintenance activities; and
- have enough space to accommodate the expected number of trains.

2.123 In considering which of the potentially suitable sites would be the optimal one to stable HS2 trains, HS2 Ltd balanced a range of factors including operational suitability, impact on the environment and the local community, engineering complexity and cost.

2.124 HS2 Ltd explored options that consisted of one large depot, many smaller ‘satellite’ stabling sites near to stations where services would terminate, and a hybrid of a large stabling facility supported by one or two small satellite sites each accommodating only a few units.

Design refinement options

2.125 Initially, brownfield sites, including depots on the existing railway were examined to see if they were suitable. Brownfield sites which could potentially act as smaller satellite facilities near Glasgow and Edinburgh as well as larger facilities capable of stabling a greater number of trains were both assessed at a high-level. However, all of these brownfield options were discounted.

2.126 The potential smaller satellite options were too small to fit facilities for light maintenance to HS2 trains, which would be necessary given how far to the south the next nearest Rolling Stock Depot (RSD) would be at Crewe. The potential brownfield sites for a larger depot were discounted for a number of reasons including having insufficient

space for HS2 trains without remodelling the sites and disrupting existing railway operations, being higher cost, being the subject of a local authority masterplan and not being operationally suitable.

- 2.127 Given no potential brownfield sites were found to be suitable, greenfield sites were then explored.
- 2.128 A number of greenfield sites were identified that could be suitable locations for a larger depot with light maintenance facilities. Two potentially suitable locations were identified near to the English-Scottish border, these were at Todhills and Annandale. A further suitable location between Glasgow and Edinburgh was also identified at Ravenstruther.
- 2.129 Compared to Annandale, a stabling facility at Todhills would be more expensive and complex to construct, but would have lower operational costs than Annandale as Todhills is closer to Glasgow and Edinburgh meaning empty trains have less distance to travel for service start/end each day. However, Todhills would have greater environmental impacts than a site at Annandale as it is partially located in flood zones 2 and 3. There would also be the need for significant road diversions to create access to the site and potential impacts on community facilities and commercial units. For an option nearer the Scottish border, Annandale was the preferred option.
- 2.130 Compared to Annandale, Ravenstruther would have had higher operational costs due to how far it is from Carlisle, Glasgow and Edinburgh, resulting in more empty train movements. The civil engineering works required to construct a depot here would be more complex than at a depot at Annandale, with more temporary highway diversions, and greater impact on the West Coast Main Line overhead line equipment due to the existing overlap and feeding arrangements. Ravenstruther is also close to scheduled monuments and residential properties, of which some would require demolition, and as such would result in adverse impacts on communities and health.
- 2.131 The Annandale site, near the English-Scottish border, was judged to be the most operationally suitable, cost-effective and least environmentally impactful solution for a stabling facility. The new facility could stable up to 28 200m HS2 trains. This stabling space at Annandale would be supplemented by a small number of trains being stabled at the existing Polmadie depot near Glasgow.

Description of the proposed change

- 2.132 The proposed Annandale train stabling facility would be approximately 18km north of Carlisle Station, situated 3.5km northwest of Gretna Green in greenfield land south of the adjacent West Coast Main Line (WCML). To the south of the proposed Annandale stabling facility is the B7076 and A74(M). Please see pages 48-56 of the accompanying Western Leg Design Refinement Consultation Mapbook for further details.
- 2.133 The proposed site is approximately 80 hectares in size. The width of the site is approximately 400m at its widest and stretches approximately 3.15km in length.

2.134 The site would perform the following functions:

- stabling trains overnight;
- internal and external cleaning;
- light servicing, inspection and maintenance;
- training and meeting facilities; and
- equipment spares storage facilities.

2.135 Most trains stabled at the Annandale Depot would start and end passenger service at Carlisle.

2.136 The proposed train stabling facility would include:

- 14 stabling slides, that can each accommodate two 200m trains;
- two connections to the existing WCML to the south for trains to enter and leave in quick succession;
- one connection to the existing WCML to the north for empty stock movements to Scottish termini, which would join the southern connection to form a loop;
- automatic carriage wash machine;
- overhead catenary system and power substation;
- waste water treatment plant;
- office and welfare building; and
- car parking and a maintenance shed for undertaking light maintenance.

2.137 Some highways modifications would be required including some road widening near to the proposed facility entrance. The south-facing connection between the site and the WCML intersects the existing road access to Cranberry Farm and a new bridge is proposed to enable continued access.

2.138 The proposed facility would sever the existing access to Williamsfield Farm. New access would be provided via the access road for Cranberry Farm and a diversion along the field boundaries.

2.139 Due to the location of the Ewes Burn, culverts and watercourse diversions would be required for this stabling facility.

2.140 A high voltage overhead line may need to be diverted.

Why the Minister of State is minded to make this change

2.141 The Minister of State is minded to include the proposed train stabling facility at Annandale, to provide overnight storage and light maintenance for HS2 trains serving the north west of England and Scotland.

2.142 The Minister of State is aware of the potential additional impacts caused by the change and has asked HS2 Ltd to continue to engage with the local community and stakeholders so that further opportunities to avoid, reduce or mitigate impacts are considered in ongoing design development.

Impacts of the proposed change

2.143 The site of the proposed train stabling facility at Annandale is farmland adjacent to the WCML and near the A74(M). Landscape and visual impacts associated with the stabling facility would occur as a result of a number of buildings at the site, including a train maintenance shed and earthworks for the stabling facility and habitat planting.

2.144 An appropriate waste water treatment and discharge mechanism would be incorporated into the scheme to allow waste water to be discharged safely into the Ewes Burn.

2.145 There would be potential traffic impacts during both the construction and operational periods, however these are expected to be low.

2.146 The facility would create around 100 permanent jobs, skilled and unskilled.

Question 4: What are your comments about the proposed train stabling facility at Annandale?

Freedom of Information

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes. These are primarily the Freedom of Information Act (FOIA) 2000, the Environmental Information Regulations (EIA) 2014, the Data Protection Act (DPA) 2018, and the General Data Protection Regulation (GDPR) 2016.

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.

How to respond and next steps

Deadline for feedback

The deadline for responding to the second Design Refinement Consultation is 11:45pm on 11 December 2020. Please ensure that you send your response before that date to ensure that it is included in our analysis and consideration.

Email and online responses can be submitted until 11:45pm on the final day of the consultation. Postal responses must be posted on or before the final day of the consultation.

Please only use the channels listed below when responding to this consultation. We cannot guarantee that responses sent to any other addresses will be considered as part of this consultation.

You can access the consultation documents and the online response form at: <https://www.gov.uk/government/consultations/hs2-phase-2b-western-leg-design-refinement-consultation>.

How to respond

You can respond to the consultation in the following ways:

Online: You can respond to the consultation at: <https://ipsos.uk/designrefinement2b>

Email: You can email your response to: designrefinement2b@ipsos-mori.com

Post: You can post your response to us using:

FREEPOST HS2 PHASE 2B DESIGN REFINEMENT

Please note that you do not need to include any more information on the envelope than the full FREEPOST address on a single line. No stamp is required

Helpdesk

If you have any questions about the information in this document or about the consultation, please get in touch via the HS2 Helpdesk on 08081 434 434 or via hs2enquiries@hs2.org.uk. You can also request a copy of this consultation document in large print, braille or audio from the Helpdesk.

Please do not send your consultation responses to the Helpdesk. Instead use the methods set out above.

Events

We are holding a series of digital information events from October 2020 to support the consultation. Members of the HS2 team will be available at these events to help answer questions about the proposed changes to the scheme and Phase 2b in general.

A full schedule of digital events can be found at www.hs2.org.uk/events.

Annex A: Consultation principles

The consultation is being conducted in line with the Government's key consultation principles which are listed below. 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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