

HS2

Infrastructure maintenance facilities

This factsheet provides information regarding the emerging proposals for the permanent infrastructure maintenance facilities required for the Proposed Scheme.

Version 2.0

Last updated: September 2020

1 Introduction

- 1.1.1 High Speed Two (HS2) is the Government's proposal for a new, high speed north-south railway. The proposal is being taken forward in phases. Phase One will connect London with Birmingham and the West Midlands. Phase 2a will extend the route to Crewe. The Western Leg of Phase 2b comprises an extension of the network to Manchester and a connection to the West Coast Main Line at Golborne, and is referred to as the Western Leg hybrid Bill. The Eastern Leg of Phase 2b currently comprises an extension of the network from the West Midlands through the East Midlands to Leeds.
- 1.1.2 HS2 Ltd is the non-departmental public body responsible for developing and promoting these proposals. The company works to a Development Agreement made with the Secretary of State for Transport.
- 1.1.3 The construction and operation of Phase One of HS2 is authorised by the High Speed Rail (London – West Midlands) Act (2017). In July 2017, the Government introduced a hybrid Bill to Parliament to seek powers for the construction and operation of Phase 2a.
- 1.1.1 In February 2020, the Government announced its intention to draw up an Integrated Rail Plan. This will recommend a way forward on scoping, phasing and sequencing the delivery of HS2 Phase 2b, Northern Powerhouse Rail, Midlands Rail Hub and other proposed rail investments across the north. At the same time, the Government asked HS2 Ltd to prepare the Western Leg hybrid Bill, provided it does not prejudge any recommendations or decisions that will be taken in this plan, which will be published by the end of the year.
- 1.1.2 It is intended to deposit a Western Leg hybrid Bill seeking powers to construct and operate this phase in Parliament in early 2022 or sooner if possible (the Proposed Scheme). The work to produce the Bill will include an Environmental Impact Assessment (EIA), the results of which will then be reported in an Environmental Statement (ES). The ES would be submitted alongside the Bill when it is introduced to Parliament. As was the case with Phase One and Phase 2a, when the Bill is introduced to Parliament the Secretary of State will also publish draft Environmental Minimum Requirements (EMRs). The EMRs will set out the environmental and sustainability commitments that will be observed in the construction of the Proposed Scheme.
- 1.1.3 A series of information papers were produced for the Phase One and Phase 2a hybrid Bills, explaining the commitments made in those Bills and EMRs. It is the Secretary of State's intention to follow a similar process for the Western Leg Bill. These information papers will be used to provide information about the Proposed Scheme itself, the powers contained in the Bill and how decisions on

the Proposed Scheme have been reached. It is currently proposed that these information papers for the Western Leg of Phase 2b will be published at the time the Bill is introduced in Parliament.

- 1.1.4 The Secretary of State for Transport will be ‘the Promoter’ of the Western Leg Bill. The Promoter will also eventually appoint a body responsible for delivering the Proposed Scheme under the powers to be granted by the Bill. This body will be known as the ‘nominated undertaker’. There may well be more than one nominated undertaker. However, any and all nominated undertakers will be bound by the obligations contained in the Bill, the policies established in the Western Leg EMRs and any commitments provided in the Western Leg information papers.
- 1.1.5 These Western Leg factsheets have been produced to provide information on the emerging proposals for measures to manage the design process for the Proposed Scheme and to control impacts which may arise from the construction and operation of the Proposed Scheme. These measures may then be applied to the Western Leg as commitments made through the eventual Bill, EMRs or information papers.

2 Overview

- 2.1.1 This factsheet provides information regarding the emerging proposals for the permanent infrastructure maintenance facilities required for the Proposed Scheme. It provides an overview of the expected strategy for infrastructure maintenance on the Western Leg of Phase 2b.
- 2.1.2 It is proposed that the Western Leg Bill would include two Infrastructure Maintenance Bases – rail (IMB-Rs) to support infrastructure maintenance. These would work in conjunction with the planned main IMB-R in the Phase 2a scheme at Stone.
- 2.1.3 Facilities to maintain or stable HS2 passenger rolling stock are not covered in this factsheet. For further information on these facilities, see the Phase 2b Western Leg Factsheet: Rolling Stock Stabling Facilities.

3 Infrastructure maintenance strategy

3.1 Types of maintenance

- 3.1.1 Maintenance is the general day-to-day upkeep of the railway that keeps trains running. It is expected to consist of:
- preventative maintenance to keep things working at their optimum level;
 - predictive maintenance to address issues with equipment before it fails; and
 - corrective maintenance to repair or replace elements once they have failed.
- 3.1.2 HS2 Ltd's infrastructure maintenance strategy is expected to involve undertaking a programme of preventative and predictive maintenance by gathering and analysing real-time information about the condition of all elements of HS2 infrastructure, to avoid corrective maintenance as far as possible.
- 3.1.3 This condition-monitoring information would be obtained by:
- using active monitoring systems on passenger trains;
 - running dedicated inspection trains with on-board specialised measuring equipment;
 - using automated fixed monitoring systems on the elements themselves (track controlling systems, security systems, fire detectors etc.) that flag up the need for additional maintenance before they fail; and
 - utilising maintenance teams to conduct on-site inspections.

3.2 Maintenance timing and facility positioning

- 3.2.1 It is expected that on-site inspection work and the majority of maintenance work itself would normally be carried out along the route at night, once passenger train services are no longer operating. Passenger services are expected to operate between 05:00 and 00:00 from Monday to Saturday and between 08:00 and 00:00 on Sunday.
- 3.2.2 When and where urgent corrective maintenance is required, work would be undertaken to return the train service to normal.
- 3.2.3 With this in mind, positioning maintenance teams and equipment at appropriate locations where they can reach the whole route safely and quickly, would allow preventative, predictive and corrective maintenance to be carried out with minimum disruption to train services and with maximum efficiency.

3.3 Maintenance across the different phases of HS2

- 3.3.1 HS2 is planned to be built in phases, with maintenance facilities constructed separately on each phase. These facilities must be capable of safely, reliably and efficiently maintaining both that phase as well as interacting effectively with facilities provided on other HS2 phases.

- 3.3.2 However, neither the maintenance facilities that will be constructed on Phase One nor the IMB-R proposed in the High Speed Rail (West Midlands-Crewe) Bill for Phase 2a are sufficient to support the expected maintenance requirements on the Western Leg of Phase 2b.
- 3.3.3 As such, separate permanent maintenance facilities would be required as part of the Proposed Scheme. These would be smaller facilities than the main IMB-R proposed at Stone in Staffordshire as part of Phase 2a. In contrast to this main IMB-R, the 'satellite' IMB-Rs on the Proposed Scheme would consist of a small number of rail sidings to stable maintenance trains at strategic points across the Western Leg. These smaller 'satellite' IMB-Rs are proposed at Ashley and Crewe North Rolling Stock Depot (RSD).
- 3.3.4 The proposal to include a satellite IMB-R near Ashley was part of the High Speed Two: Phase 2b Design Refinement Consultation (2019). The proposal to include a further satellite IMB-R at Crewe North RSD is being consulted on as part of the HS2 Phase 2b Western Leg Design Refinement Consultation (2020).

3.4 Overview of maintenance facility requirements

- 3.4.1 In addition to the requirements described above, the permanent maintenance facilities have several core functional requirements, such as:
- connection to the conventional railway network to a line that can accommodate freight trains to deliver and remove materials needed to maintain HS2;
 - adequate connection to the road network;
 - connections to the HS2 main line; and
 - suitable space to load and unload trains as well as to store plant, trains and materials.

4 IMB-R sites

- 4.1.1 It is expected that, where practicable, materials would be delivered to each IMB-R using the existing and proposed rail network.
- 4.1.2 The Code of Construction Practice (CoCP) is expected to require that a route-wide Traffic Management Plan (TMP) be produced, in liaison with highway and traffic authorities and the emergency services. As appropriate, the plan would be expected to include:
- the means of managing lorry flows;
 - the requirement for vehicle and driver safety;
 - requirements for preparing workforce travel plans;

- the strategy for design and consultation for traffic management (including the signing strategy for emergency service access and lorry wayfinding); and
- the requirements for protecting highways.

4.1.3 Local TMPs would also be produced in liaison with highway and traffic authorities and the emergency services. As appropriate, these would be expected to include:

- contractors' construction flow assumptions;
- the local routes to be used by large goods vehicles (approved where applicable), including lorry holding areas required for construction of the Proposed Scheme; and
- significant works affecting roads and public rights of way, including temporary and permanent closures and diversions.

4.1.4 Contractors would be required to consider and, where reasonably practicable, mitigate noise generated by road-going construction traffic.

4.1.5 It is expected that construction vehicles and their impact on road safety would be managed, monitored and controlled by:

- a vehicle monitoring system, to enable contractors to provide forecast and actual movement data as well as information on safety compliance;
- vehicle flow monitoring, where there are specific restrictions on numbers of vehicles permitted to use a route;
- vehicle identification;
- driver training in vulnerable road user awareness, rural road driving and fuel efficiency;
- requirements for vehicle safety equipment and blind spot minimisation;
- the implementation of fleet operator quality schemes; and
- the implementation of route and flow monitoring, including monitoring of whether the driver and vehicle safety requirements are being met.

4.1.6 For more information on the Code of Construction Practice and Traffic Management Plans, see Phase 2b Western Leg Factsheets: Draft Code of Construction Practice; and Management of Traffic during Construction.

4.1.7 As it is expected that the majority of heavy materials would arrive at the IMB-Rs by the existing and proposed rail network, rather than by road, reception sidings and a headshunt connecting the IMB-Rs to Network Rail lines would also be provided. Once in the IMB-R, trains carrying heavy materials would be stabled or unloaded.

4.1.8 At the satellite IMB-R near Ashley, it is proposed that the connection to Network Rail that was included in the 2019 High Speed Two: Phase 2b Design Refinement

Consultation (2019) is removed. This change was requested by consultees. This connection to the existing railway is no longer proposed at the satellite IMB-R at Ashley so as to reduce the potential impact of the Proposed Scheme on Ashley village and because connections to the existing railway at the satellite IMB-R at Crewe North and the proposed main IMB-R at Stone are expected to be sufficient to support the maintenance strategy for the Western Leg.

- 4.1.9 It is expected that the main IMB-R at Stone would consist of a range of buildings and facilities, including storage areas, workshops, welfare facilities, offices and car parking. The satellite IMB-Rs proposed at Crewe North RSD and Ashley are expected to consist of two rail sidings to stable maintenance trains, a small amount of storage space and a small number of car parking spaces.

5 IMB-R operations

- 5.1.1 The main IMB-R at Stone is expected to be operational 24-hours a day, 7-days-a-week. During the day, operations at the main IMB-R at Stone would include planning, management and preparation for maintenance activities, such as loading maintenance trains. From Stone IMB-R, loaded maintenance trains would be dispatched to the satellite IMB-Rs proposed at Ashley and Crewe North RSD. This would occur mainly during the day outside peak passenger service hours.
- 5.1.2 The satellite IMB-Rs proposed at Crewe North RSD and Ashley would be used as and when needed by the maintenance schedule and would not be in constant use. When in use, maintenance units would normally be prepared and dispatched from satellite IMB-Rs at around midnight and return before the closure of the maintenance window, at 04:59 Monday to Saturday and at 07:59 on Sunday. In an emergency, maintenance units may be dispatched and return outside of these hours.
- 5.1.3 Once passenger services draw to a close in the evening, maintenance trains would then leave the satellite IMB-Rs and travel to wherever maintenance is required. The majority of actual maintenance works will be carried out away from the IMB-Rs and along the railway.
- 5.1.4 As described earlier, during the operational phase of the Proposed Scheme, supplies would be delivered to each satellite IMB-R via rail and road, although the majority of heavy materials would arrive by rail.
- 5.1.5 Construction, maintenance and operation of the Proposed Scheme, including the IMB-Rs, would be in accordance with environmental legislation and good practice.

6 More information

- 6.1.1 Further factsheets and details on the Proposed Scheme can be found at:
www.hs2.org.uk/phase2b