



## Phase 2b Western Leg Information Paper

### E19: Soil handling for land restoration

This paper outlines how HS2 Ltd intends to conserve soils displaced by the construction of Proposed Scheme and subsequently use them for the restoration of land for agriculture, forestry, landscape planting and ecological habitat creation and translocation.

It will be of particular interest to those potentially affected by the Government's proposals for high speed rail.

This paper was prepared in relation to the promotion of the High Speed Rail (Crewe - Manchester) Bill. Content will be maintained and updated as considered appropriate during the passage of the Bill.

If you have any queries about this paper or about how it might apply to you, please contact the HS2 Helpdesk in the first instance.

**The Helpdesk can be contacted:**

**by email:** [HS2enquiries@hs2.org.uk](mailto:HS2enquiries@hs2.org.uk)

**by phone (24hrs):** 08081 434 434  
08081 456 472 (minicom)

**or by post:** High Speed Two (HS2) Limited  
2 Snowhill, Queensway  
Birmingham  
B4 6GA

## 1 Introduction

- 1.1 High Speed Two (HS2) is the Government's scheme for a new, high speed north-south railway, which is being taken forward in a number of phases. Phase One will connect London with Birmingham and the West Midlands. Phase 2a will extend the route from the West Midlands to Crewe. The Phase 2b Western Leg will connect Crewe to Manchester. As set out in the Integrated Rail Plan, published in November 2021, HS2 East is proposed to deliver a new high speed line from the West Midlands to East Midlands Parkway.
- 1.2 HS2 Ltd is the non-departmental public body responsible for developing and promoting these proposals. The company works under the terms of a Development Agreement entered into with the Secretary of State for Transport.
- 1.3 The construction and operation of Phase One of HS2 is authorised by the High Speed Rail (London – West Midlands) Act 2017 and Phase 2a by the High Speed Rail (West Midlands – Crewe) Act 2021.
- 1.4 In January 2022, the Government introduced a hybrid Bill to Parliament (hereafter referred to as 'the Bill'), to seek powers for the construction and operation of the Phase 2b Western Leg (the Proposed Scheme), which is called the High Speed Rail (Crewe – Manchester) Bill. The Proposed Scheme comprises the Phase 2b Western Leg from Crewe to Manchester and several off-route works. It also facilitates the delivery of Northern Powerhouse Rail by providing the Crewe Northern Connection and junctions and other infrastructure to be used in future schemes.
- 1.5 The work to produce the Bill includes an Equalities Impact Assessment and an Environmental Impact Assessment (EIA), the results of which are reported in an Environmental Statement (ES) submitted alongside the Bill. The Secretary of State has also published draft Environmental Minimum Requirements (EMRs), which set out the environmental and sustainability commitments that will be observed in the construction of the Proposed

Scheme. For more information on the EMRs please see Information Paper E1: Control of environmental impacts.

1.6 The Secretary of State for Transport is the Promoter of the Bill through Parliament. The Promoter will also appoint a body responsible for delivering the Proposed Scheme under the powers granted by the Bill. This body is known as the 'nominated undertaker'. There may 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 EMRs and any commitments provided in the information papers.

1.7 These information papers have been produced to explain the commitments made in the Bill and the EMRs and how they will be applied to the design and construction of the Proposed Scheme. They also provide information about the Proposed Scheme itself, the powers contained in the Bill and how particular decisions about the Proposed Scheme have been reached.

## **2 Overview**

2.1 This information paper considers the handling of natural soils affected by the construction of the Proposed Scheme, which are identified to be conserved and reinstated for agriculture, landscape planting and ecology land uses. Excavated materials used for engineering earthworks that will not be used to sustain vegetation in the future are subject to different requirements. For further information, please refer to Information Paper E17: Excavated material and waste management.

## **3 Principles of soil handling**

3.1 The sustainable reuse of soils displaced by the Proposed Scheme is a key mitigation measure. Conserved soils will be used for the restoration of land to agriculture, forestry, landscape planting and ecological habitat creation, as set out in the ES and the draft Code of Construction Practice (CoCP).

- 3.2 Where agricultural uses are to be resumed on land disturbed during the construction of the Proposed Scheme, the design objective is to restore land to its previous Agricultural Land Classification (ALC) grading.
- 3.3 Restoration would seek to avoid any reduction in long term capability, which would downgrade the quality of the disturbed land, through the adoption of good practice techniques in handling, storing and reinstating soils on that land. This is subject to any alternative arrangements agreed with the owner of the land. The same general principles of soil handling will be applied to the reinstatement of land for forestry, landscape planting, ecological habitat creation and translocation.
- 3.4 The nominated undertaker will produce a Soil Resource Plan (SRP) for each affected agricultural holding (a Farm Pack SRP) along the route of the Proposed Scheme. These plans will present the baseline condition of the agricultural land and soil and set out the methods for soil handling and storage. The SRPs shall be shared with affected landowners and/or occupiers by the contractor prior to the commencement of site works.
- 3.5 Guidance on handling is provided by the Construction Code of Practice for the Sustainable Use of Soils on Construction Sites 2009 (CCoP) published by the Department of Environment, Food and Rural Affairs (Defra), which is generally accepted as the primary guidance on handling to minimise damage to soils. Further guidance can be found in the Good Practice Guide for Handling Soil 2000; and the Design Manual for Roads and Bridges (DMRB). Weed control will conform to the Wildlife and Countryside Act 1981, as amended, or the Weeds Act 1959.
- 3.6 Where soil handling is required as part of habitat translocation works from sensitive donor sites, the soils will be translocated from the donor site to the receptor site without a period of storage. This soil will be subject to a separate method of handling. The donor and receptor site soil profiles will be assessed in detail for compatibility prior to being translocated and these detailed soil surveys, carried out by experienced soil practitioners, will help inform the methodology of the translocation.

## 4 Route-wide soil handling

4.1 The principal objectives of HS2 Ltd's soil handling policy are:

- the conservation of soil resources,
- the avoidance of damage to soil structures;
- the maintenance of soil drainage;
- the reinstatement of the soil profile; and
- the preservation of soil biodiversity.

4.2 During construction of the Proposed Scheme appropriate measures will be implemented where necessary for the purpose of meeting the soil restoration and reinstatement principles and objectives as detailed in section 3 and paragraph 4.1 above. For example, this may include the enforcement of such measures as are necessary to protect soils on land required for the Proposed Scheme over which large construction vehicles may need to be driven or hauled.

4.3 Land which will not be disturbed by the Proposed Scheme during construction (e.g. around features like retained trees) will be fenced off, clearly marked and not traversed by machinery.

4.4 All soil materials will be handled under suitable weather and soil conditions using appropriate machinery. The stripping, storage and reinstatement of soils will be carried out in accordance with the Farm Holding SRPs and will be accompanied by a soil audit report produced by the nominated undertaker or contractor.

4.5 The sources, contents and approximate volumes of soil stockpiles will be calculated from soil survey records compiled prior to the stripping and storage of soils. In defining target restored profiles the volumes of available soils in storage will be related to the areas of each parcel of land to be restored. Soil resource management will include plans that allocate topsoils and subsoils to different land uses.

- 4.6 Soils will be handled when least susceptible to damage, and in accordance with Defra's CCoP. The Good Practice Guide for Handling Soil 2000 (Sheets 1 to 4) describes the typical machinery that will be used in most cases to strip and transport soil materials into and out of store, and to reinstate topsoils and subsoils. For example, alternative specialised machinery will be used for landscape planting on areas with steeper slopes see section 5 below).

#### Soil Storage

- 4.7 Defra's CCoP describes methods for the construction of soil stockpiles and the DMRB provides guidance on the storage of topsoils for engineering purposes. These documents set out a range of heights for topsoil and subsoil storage. For the translocation of soils from sensitive donor sites the soils will generally be removed, transported and reinstated at the receptor site without a period of storage.
- 4.8 Areas to be used for storing topsoil will first be cleared of vegetation. Areas to be used for storing subsoils will be stripped of topsoil (and this material will be temporarily stockpiled). Once the soil stockpile has been completed the area will be fenced-off to prevent any disturbance or contamination by other construction activities.
- 4.9 Topsoils that are going to be stored for more than six months will be seeded with a low-maintenance grass mix to minimise soil erosion and prevent infestation by weeds. Where soil storage mounds are not covered with grass then during dry periods they will be sprayed as necessary with water to minimise the generation of dust.

#### Placement of Excavated Materials

- 4.10 Following the placement of excavated materials, the surface will be graded to create the required contours and landform, minus the specified thickness of subsoil and topsoil cover. Excavated material may be overfilled to allow for a period of settlement to the design profile or required landform.

- 4.11 The subsoil and topsoil required to meet the specific requirements of the target Agricultural Land Classification (ALC) grade, landscape planting and habitat substrate will be replaced above the excavated materials. The geochemistry of imported soil materials (including its natural geochemistry) will be suitable for the environment in which it is being placed.

#### Reinstatement Method

- 4.12 Reinstatement will involve topsoil being placed above subsoil. Where upper subsoil is to be replaced, it will be placed above lower subsoil. The methodology used will be based on Defra's CCoP to minimise damage to soils. Approaches may be modified to suit particular soil types or local circumstances. The completed restoration will be cultivated to a seed bed appropriate to the first crop or vegetation, as agreed with landowners, farmers or tenants. Aftercare and subsequent monitoring will then be carried out.

## **5 Restoration for landscape and ecology**

- 5.1 Similar soil reinstatement methods will be applied to land reinstated for landscape planting on land with shallow to moderate gradients, and where access permits. Alternative methods using specialised machinery will be applicable for landscape planting on areas with steeper slopes, particularly for cuttings and embankments. Soil placement on inward-facing railway slopes will be in accordance with the DMRB. Soil depths and fertility requirements will be specified for different planting or habitats. For the translocation of soils from sensitive donor sites efforts will be made to match the soils in donor and receptor sites.

## **6 Construction sites and haul routes**

- 6.1 Topsoils will be stripped from construction sites and haul routes and stockpiled. The stockpiles are likely to be used for screening the site and will be vegetated. Prior to removing the soils from the stockpiles this

vegetation will be sprayed with herbicides and arisings will be removed as far as practicable.

- 6.2 Where construction sites and haul routes are returned to agriculture this will require loosening of the subsoil prior to topsoil placement. Following restoration, affected areas will enter into a period of aftercare of up to 5 years, and agricultural under-drainage may be required. Where land has been temporarily occupied, this will be undertaken by agreement with the landowner.

## **7 Monitoring**

- 7.1 During construction on-site inspections of works will be carried out by the nominated undertaker (at a frequency that will be stated after Royal Assent to the Bill), to monitor progress and standards of restoration. Completed works will be inspected by a suitably qualified and experienced soil scientist or practitioner to certify that the land has been restored to the specifications as set out in the SRPs. Contractors will also provide an audit of soil resources following a soil survey within six months of completion of the restoration.
- 7.2 The nominated undertaker will put in place agricultural liaison officers who will be available by telephone 24 hours a day, 7 days per week, during the construction of the Proposed Scheme on agricultural land. More information will be available on this after Royal Assent to the Bill.
- 7.3 The Secretary of State will require that the Nominated Undertaker:
- Provide the name and contact details of the agricultural liaison service provider(s) (and any replacement) to the NFU before he or she takes up his or her post;
  - Arrange meetings between the agricultural liaison service provider(s) and the NFU on a regular basis, and at least every three months to discuss the activities of the agricultural liaison service provider(s).

## **8 More information**

- 8.1 More detail on the Bill and related documents can be found at [www.gov.uk/hs2-phase2b-crewe-manchester](http://www.gov.uk/hs2-phase2b-crewe-manchester).

## References

Construction Code of Practice for the Sustainable Use of Soils on Construction Sites  
2009:

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/716510/pb13298-code-of-practice-090910.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf)

Good Practice Guide for Handling Soil, 2000:

<https://webarchive.nationalarchives.gov.uk/20090317221756/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm>

Design Manual for Roads and Bridges:

<https://www.standardsforhighways.co.uk/dmrb/>

Wildlife and Countryside Act 1981:

[https://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga\\_19810069\\_en.pdf](https://www.legislation.gov.uk/ukpga/1981/69/pdfs/ukpga_19810069_en.pdf)

Weeds Act 1959:

[https://www.legislation.gov.uk/ukpga/1959/54/pdfs/ukpga\\_19590054\\_en.pdf](https://www.legislation.gov.uk/ukpga/1959/54/pdfs/ukpga_19590054_en.pdf)