

Soil handling and land restoration

This factsheet explains the policy that is expected to be adopted for the handling of natural soils affected by the construction of the Proposed Scheme, which may be identified to be conserved and reinstated for agriculture, landscape planting and ecology land uses.

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. Phase 2b will extend the route to Manchester, Leeds and beyond (the 'Proposed Scheme').
- 1.1.2 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. A hybrid Bill to seek powers for the construction and operation of Phase 2b is expected to be introduced to Parliament in 2020.
- 1.1.3 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.
- 1.1.4 The work to produce the Phase 2b 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 Phase 2b Bill when it is introduced to Parliament. The emerging findings of the EIA were reported in a working draft Environmental Statement (WDES) that was consulted on in late 2018.
- 1.1.5 As was the case with Phase One and Phase 2a, when the Phase 2b 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 and operation of Phase 2b.
- 1.1.6 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 Phase 2b Bill. These information papers for Phase 2b will be used to provide information about Phase 2b itself, the powers contained in the Phase 2b Bill when it is introduced to Parliament and how decisions on Phase 2b have been reached. It is currently proposed that these information papers for Phase 2b will be published at the time the Phase 2b Bill is introduced in Parliament.
- 1.1.7 The Secretary of State for Transport will be 'the Promoter' of the Phase 2b Bill. The Promoter will also eventually appoint a body responsible for delivering the Proposed Scheme under the powers to be granted by the Phase 2b 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 Phase 2b Bill, the policies established in the Phase 2b EMRs and any commitments provided in the Phase 2b information papers.

- 1.1.8 These Phase 2b Factsheets have been produced to provide information on the emerging proposals for measures to manage the design process for Phase 2b and to control impacts which may arise from the construction and operation of the Proposed Scheme. These measures may then be applied to Phase 2b as commitments made through the eventual Phase 2b Bill, EMRs or information papers.

2 Overview

- 2.1.1 This factsheet explains the policy that is expected to be adopted for the handling of natural soils affected by the construction of the Proposed Scheme, which may be identified to be conserved and reinstated for agriculture, landscape planting and ecology land uses. Excavated materials used for engineering earthworks that would not be used to sustain vegetation in the future are subject to different requirements.

3 Principles of soil handling

- 3.1.1 The sustainable reuse of soils displaced by the Proposed Scheme will be a key mitigation measure. Conserved soils would be used for the restoration of land to agriculture, forestry, landscape planting and ecological habitat creation, which will be set out in the ES and the draft Code of Construction Practice (CoCP). For further information please see Phase 2b Factsheet: draft Code of Construction Practice.
- 3.1.2 Where agricultural uses are to be resumed on land disturbed during the construction of the Proposed Scheme, the design objective is 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 may be subject to any alternative arrangements agreed with the owner of the land. The same general principles of soil handling would be applied to the reinstatement of land for forestry, landscape planting, ecological habitat creation and translocation.
- 3.1.3 Detailed Construction Area-wide Soil Resource Plans (SRPs) would be produced by the nominated undertaker for geographically defined construction zones along the route of the Proposed Scheme. These plans would allocate topsoils and subsoils to different land uses and set out the methods for soil handling and storage.

3.1.4 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 published by the Ministry of Agriculture, Fisheries and Food (MAFF)¹; 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.

4 Route-wide soil handling

4.1 General soil handling

4.1.1 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.

4.1.2 It is anticipated that land that would not be disturbed by the Proposed Scheme during construction (e.g. around features like retained trees) would be fenced off, clearly marked and not traversed by machinery.

4.1.3 Large construction vehicles would not be driven or hauled within the land required for the Proposed Scheme from which topsoil/ subsoil has not been stripped (except for the purposes of stripping) unless protective temporary surfaces are used. Wheeled machinery would not go over soil stockpiles, unless necessary for seeding, sward maintenance or weed control.

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

4.1.5 The sources, locations, contents and approximate volumes of soil stockpiles would be available from soil survey records compiled prior to the stripping and storage of soils. These records would form part of the baseline information and would be made available. In defining target restored profiles the volumes of

¹ Now referred to as the Department of Environment, Food and Rural Affairs (Defra).

available soils in storage would be related to the areas of each parcel of land to be restored.

- 4.1.6 Soils would be handled when least susceptible to damage, and in accordance with Defra's CCoP. The MAFF Good Practice Guide, 2000 (Sheets 1 to 4) describes the typical machinery that would be used in most cases to strip and transport soil materials into and out of store, and to reinstate topsoils and subsoils. Soil handling machinery would be restricted to marked haul routes and would not traverse undisturbed or replaced soils, except where such trafficking is essential for the permitted operations agreed with the nominated undertaker.

4.2 Soil storage

- 4.2.1 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 would generally be removed, transported and reinstated at the receptor site without a period of storage.
- 4.2.2 Areas to be used for storing topsoil would first be cleared of vegetation. Areas to be used for storing subsoils would be stripped of topsoil (and this material would be temporarily stockpiled). Once the soil stockpile has been completed the area would be fenced-off to prevent any disturbance or contamination by other construction activities.
- 4.2.3 Topsoils that are going to be stored for more than six months would 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 they would be sprayed with water if required to minimise the generation of dust.

4.3 Placement of excavated materials

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

4.4 Reinstatement method

- 4.4.1 Reinstatement would involve topsoil being placed above subsoil. Where upper subsoil is to be replaced, it would 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 would be cultivated to a seed bed appropriate to the first crop or vegetation, as agreed with landowners, farmers or tenants. Aftercare and subsequent monitoring would then be carried out.

5 Restoration for landscape and ecology

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

6 Construction sites and haul routes

- 6.1.1 Topsoils would be stripped from construction sites and haul routes and stockpiled. The stockpiles are likely to be used for screening the site and would be vegetated. Prior to removing the soils from the stockpiles this vegetation would be sprayed with herbicides and arisings would be removed as far as practicable.
- 6.1.2 Where construction sites and haul routes are returned to agriculture this would require loosening of the subsoil prior to topsoil placement. Following restoration, affected areas would enter into a period of aftercare of up to five years, and agricultural under-drainage may be required. Where land has been temporarily occupied, this would be undertaken by agreement with the landowner.

7 Monitoring

- 7.1.1 During construction, on-site inspections of works would be carried out by the nominated undertaker (at a frequency that will be stated after Royal Assent), to monitor progress and standards of restoration. Completed works would 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 would also provide an audit of soil resources following a soil survey within six months of completion of the restoration.
- 7.1.2 It is anticipated that the nominated undertaker would put in place agricultural liaison officers who will be available by telephone 24 hours a day, seven days per week, during the construction of the Proposed Scheme on agricultural land.

8 More information

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