



HIGH SPEED TWO PHASE ONE INFORMATION PAPER

E33 SOIL HANDLING FOR LAND RESTORATION

This paper outlines how HS2 Ltd intends to conserve soils displaced by the construction of HS2 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 concerned with land potentially affected by the Government's proposals for high speed rail.

This paper was prepared in relation to the promotion of the Bill for Phase One of the scheme which is now enacted. Although the contents were maintained and updated as considered appropriate during the passage of the Bill (including shortly prior to the enactment of the Bill in February 2017) the contents are now historic and are no longer maintained.

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 reached at:

**High Speed Two (HS2) Limited
Two Snowhill, Snow Hill Queensway
Birmingham, B4 6GA**

by email: HS2enquiries@hs2.org.uk

or by phone: 08081 434 434 (lines are open 24 hours)

Version 1.1

Last update 23rd February 2017

SOIL HANDLING FOR LAND RESTORATION

1. Introduction

- 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 two phases: Phase One will connect London with Birmingham and the West Midlands and Phase Two will extend the route to Manchester, Leeds and beyond.
- 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.
- 1.3. In November 2013, HS2 Ltd deposited a hybrid Bill¹ with Parliament to seek powers for the construction and operation of Phase One of HS2 (sometimes referred to as 'the Proposed Scheme'). The Bill is the culmination of nearly six years of work, including an Environmental Impact Assessment (EIA), the results of which were 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.
- 1.4. The Bill is being promoted through Parliament by the Secretary of State for Transport (the 'Promoter'). The Secretary of State will also appoint a body responsible for delivering the Proposed Scheme under the powers granted by the Bill.
- 1.5. This body is known as the 'nominated undertaker'. There may well be more than one nominated undertaker – for example, HS2 Ltd could become the nominated undertaker for the main railway works, while Network Rail could become the nominated undertaker for works to an existing station such as Euston. But whoever they are, all nominated undertakers will be bound by the obligations contained in the Bill and the policies established in the EMRs.
- 1.6. 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 project have been reached.

¹The High Speed Rail (London – West Midlands) Bill, hereafter 'the Bill'.

2. Principles of Soil Handling

- 2.1. 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 Environmental Statement and draft Code of Construction Practice (CoCP).
- 2.2. This Information Paper considers the handling of natural soils affected by the construction of HS2 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.
- 2.3. Agricultural land disturbed as a result of the construction of HS2 will be reinstated to its original quality except where the land is used for landscape planting or ecological habitat creation, unless otherwise agreed by the owner of the land. However, the same general principles of soil handling will be applied to the reinstatement of land for agriculture, forestry, landscape planting, ecological habitat creation and translocation.
- 2.4. Detailed Location Specific Soil Resource Plans (LSSRPs) will be produced by HS2 Ltd for geographically defined construction zones along the route. These plans will allocate topsoils and subsoils to different land uses and set out the methods for soil handling and storage.
- 2.5. 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 published by the Ministry of Agriculture, Fisheries and Food (MAFF); 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. Route-wide soil handling

General Soil Handling

- 3.1. The principal objectives of this 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.

- 3.2. 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.
- 3.3. Large construction vehicles will not be driven or hauled within the land required for the project from which topsoil/ subsoil has not been stripped (except for the purposes of stripping) unless protective temporary surfaces are used. Wheeled machinery will not go over soil stockpiles, unless necessary for seeding, sward maintenance or weed control.
- 3.4. 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 with reference to the LSSRPs and will be accompanied by a soil audit report produced by the contractor.
- 3.5. The sources, locations, contents and approximate volumes of soil stockpiles will be available from soil survey records compiled prior to the stripping and storage of soils. These records will form part of the baseline information and will be made available. 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.
- 3.6. Soils will 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 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 4 below). Soil handling machinery will be restricted to marked haul routes and will not traverse undisturbed or replaced soils, except where such trafficking is essential for the permitted operations agreed with the nominated undertaker.

Soil Storage

- 3.7. 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.
- 3.8. 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.
- 3.9. 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 they will be sprayed with water to minimise the generation of dust.

Placement of Excavated Materials

- 3.10. 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.
- 3.11. 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

- 3.12. 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.

4. Restoration for Landscape and Ecology

- 4.1. 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.

5. Construction Sites and Haul Routes

- 5.1. 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.
- 5.2. 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.

6. Monitoring

- 6.1. 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 of 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 LSSRPs. Contractors will also provide an audit of soil resources following a soil survey within six months of completion of the restoration.

- 6.2. 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 HS2 works on agricultural land. More information will be available on this after Royal Assent of the Bill.

7. More information

- 7.1. More detail on the Bill and related documents can be found at: www.gov.uk/HS2