

Local Environmental Management Plan for London Borough of Brent

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1 Introduction

- 1.1.1 This Local Environmental Management plan (LEMP) sets out site specific control measures to be adopted by HS2 Contractors working within the London Borough of Brent (LBB). This LEMP builds upon but does not repeat the HS2 general environmental requirements set out in the Control of Construction Practice (CoCP) (available online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/593592/Code_of_Construction_Practice.pdf).
- 1.1.2 This LEMP contains control measures and standards to be implemented within LBB. The sections within this LEMP should not be read in isolation from other sections due to the interconnected nature of the measures between disciplines.
- 1.1.3 For ease of reference, the LEMP mirrors the topic headings in the CoCP.
- 1.1.4 Information of relevance to the formation and development of this LEMP (as shown in Figure 1) is contained within this document, or links are provided to where it can be accessed. This includes:
- Information from traffic, environmental surveys and ground investigation works. This could either be seasonal ecological surveys, tree surveys, air quality monitoring, noise monitoring, ground settlement or the results of ground investigations detailing levels of contamination (where present) and the nature of the ground;
 - Feedback on pertinent information from on-going engagement; and
 - Results of petitions of the Parliamentary process which have resulted in amendments to the mitigation measures contained within the CoCP.



Figure 1: Key work streams that will provide additional information for the LEMPs.

- 1.1.5 This LEMP has been prepared taking into account findings of the Environmental Statement (ES); the Additional Provision ES (AP ES); the Supplementary Environment Statement (SES) and AP₂ ES; the SES₃ and AP₄ ES; and the SES₄ and AP₅ ES, where relevant. It has evolved during the Parliamentary process and engagement with the Local Authority and other Stakeholders, such as members of the National Environment Forum, which have informed its development. This LEMP may be subject to further refinement, amendment, and expansion as necessary as the project design progresses.
- 1.1.6 The Contractors will implement the requirements of the LEMPs and the CoCP through their own Environmental Management System (EMS), which will be certified to BS EN ISO 14001.
- 1.1.7 The Nominated Undertaker (HS2 Ltd)¹ and/or its Contractors will continue to engage with the local Stakeholders. This will take the form of engagement events which will be carried out to introduce and brief the communities on local environmental information, management, and mitigation as detailed within this document.
- 1.1.8 The HS2 Environmental Memorandum identifies key worksites along the route of HS2 Phase One that are environmentally sensitive in terms of nature conservation, terrestrial and aquatic ecology, water resources, geomorphology, recreation and amenity, landscape, public open space and agricultural land. The criteria for inclusion

¹ HS2 Ltd is the Nominated Undertaker. The two terms are used interchangeably throughout this LEMP.

are 'worksites where a key significant impact (that has been agreed with the HS2 National Environment Forum members) is generated in any of the environmental topics' as mentioned above. There are currently no such sites identified in Brent.

1.1.9 The controls within this LEMP, as with those in the CoCP, are in line with HS2's 'Safe at Heart' health and safety brand. Safe at Heart seeks to ensure that health and safety are at the heart of everything that we do including in the design, construction and operation of the scheme. This aim stretches beyond the scheme itself, through instruments such as this LEMP, and into the communities along the scheme to ensure that we protect their health, safety and wellbeing.

1.1.10 HS2 documents referenced within this LEMP can be found on the www.gov.uk website.

1.2 Area and Scope

1.2.1 Plans showing an overview of the local authority area covered by this LEMP are shown within the Environmental Statement (ES) maps (CFA4 Volume 2 Map Books ES Ref 3.2.2.4) – CT-05-006b, CT-05-007, CT-05-008, CT-05-009a-R1, CT-05-010b, CT-05-010b-R1 and CT-05-011.

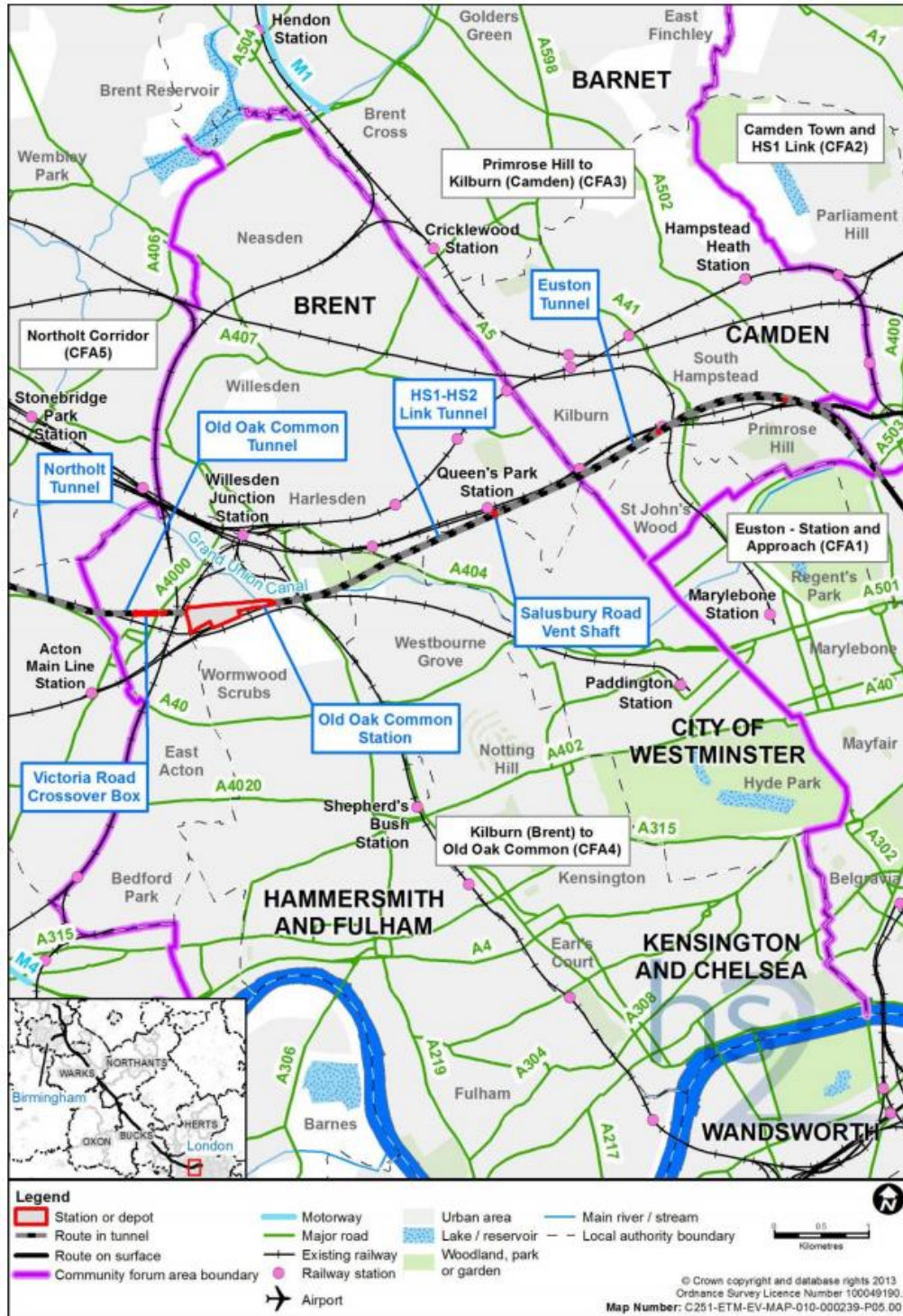


Figure 2: London Borough of Brent Area Context Map

1.2.2 Construction worksites and areas required for construction works are shown within the CT-05 maps. The following construction compound location in LBB will be:

- Canterbury Works Vent Shaft main construction compound.

1.2.3 The Main Works Civils Contractors (MWCC), Skanska Costain STRABAG Joint Venture (SCSJV) Railways mobilised to site in November 2019 to undertake preparation works. MWCC were given full notice to proceed with the Main Works on 15th April 2020.

1.2.4 Costain Skanska Joint Venture (CSJV) have undertaken enabling works in the borough.

1.2.5 It is anticipated that the following work activities in LBB will include but are not limited to:

- Canterbury Works vent shaft site;
- Ground investigations and associated environmental surveys;
- Site clearance and enabling works;
- Building demolition;
- Vent shaft construction;
- Vent shaft internal structures civil engineering and building works;
- Excavation and construction of short connecting tunnels between the vent shaft and tunnels;
- Headhouse construction;
- Railway systems installation;
- Fit out of Canterbury Works vent shaft and headhouse; and
- Installation of the ATS at Canterbury works vent shaft.

1.2.6 The following assets to be delivered by MWCC in LBB include:

- F-Sidings satellite compound (used to support modifications to existing railway in other LA areas):
- Site clearance and enabling works of disused NR siding; and
- Civil engineering works, including: establishment of permanent ramp and carpark
- Enabling works associated with utilities ahead of tunnel construction.

1.2.7 To support the delivery of these assets, there may be associated ground investigations works and utilities works across the borough which may require temporary site compounds.

1.2.8 Required ground investigation work is to inform detailed design and will include but is not limited to:

- Survey Control Network;
- Geospatial Monitoring;
- Topographical Surveys;
- Utility Surveys;
- Condition Surveys;
- Obstructions; and
- Temporary Works.

1.2.9 Utilities include water, gas, electricity and telecommunication. The utility work is required to facilitate the Main works and will consist of but is not limited to:

- Diversions;
- Protection;
- Removals; and
- New Connections.

2 Purpose of the Local Environmental Management Plan

2.1.1 This LEMP focuses on the area specific control measures by topic as relevant to construction works within LBB. The measures described will be applied by the Nominated Undertaker and its Contractors throughout the construction period to reduce the potential environmental and community impacts within LBB during construction. .

2.1.2 The Nominated Undertaker's Contractors will develop detailed environmental site management mitigation through their EMS, taking into account this LEMP and the Environmental Minimum Requirements (EMRs).

3 Policy and Environmental Management Principles

3.1.1 Information relating to the HS2 Ltd sustainability policy and environmental management principles is provided in Section 3 of the CoCP.

4 Implementation

4.1.1 Details relating to implementation, such as enforcement and site management measures, are provided in Section 4 of the CoCP.

5 General Requirements

5.1.1 General control measures relating to community relations, hours of work, pollution incident control and security etc. are identified in Section 5 of the CoCP.

5.1.2 To reduce the likelihood of an environmental incident or nuisance occurring, measures from Section 5 of the CoCP will be implemented, as detailed in sections 5.2 to 5.16 below:

- Effective preventative pest and vermin control and prompt treatment of any pest and vermin infestation on site, including arrangements for disposing of food waste or other attractive material. If infestation occurs, the Contractor will take action to eliminate the infestation and prevent further occurrence.

5.2 Community Relations

5.2.1 As detailed within Section 5 of the CoCP, the Nominated Undertaker and its Contractors will implement the Community Engagement Framework. The Framework will focus on engagement during construction with the local communities and on the specific needs of protected groups (as defined in the Equalities Act 2010) especially those who may be affected by construction impacts in the immediate vicinity of the works. A range of tools will be used to achieve this that will tailor engagement to local needs.

5.2.2 Successful management of the project will involve understanding communities and their needs, actively engaging, listening and responding. The arrangements for this are set out in the HS2 Community Engagement Framework. Liaison with the local community will take place to consistently provide timely, clear tailored information on

the construction programme, updates on forthcoming works. It will also provide the opportunity for members of the public to respond, discuss issues and provide feedback that can be acted upon. This information will be included in the local area plan for community engagement.

5.2.3 The local area plan will take account both of distinct geographic distribution of the communities in LBB and will involve the Contractors and any relevant third parties² and stakeholders, for which there will be co-ordination arrangements and can be found on <https://www.hs2.org.uk/in-your-area/local-community-webpages/>.

5.2.4 In addition, information on the construction of HS2 in LBH will be made available to the local community through the HS2 website (available online at: <https://www.hs2.org.uk/in-your-area/local-community-webpages/>).

5.2.5 Ongoing engagement with local interests and community groups will occur during construction, as listed in Appendix 2 of this LEMP. (NB: This list is indicative and will be subject to change as more information becomes available.)

Advanced notice of works

5.2.6 The Nominated Undertaker and its Contractors are committed to informing communities on matters of interest and relevance. Therefore, they will ensure that Stakeholders affected by the proposed construction works, as outlined in the ES, will be informed in advance of works by methods outlined in the Community Engagement Framework and as per Section 5.1.4 of the CoCP.

5.3 Working Hours

Consents

5.3.1 The framework for seeking consent for working hours under Section 61 of the Control of Pollution Act 1974 is set out in the CoCP.

Core Working Hours

5.3.2 Core working hours will be from 08:00 – 18:00 on weekdays (excluding bank holidays) and 08:00 – 13:00 on Saturdays. See also HS2 Information Paper D4: Working Hours.

5.3.3 A period of up to one hour before and up to one hour after core working hours will be required for start-up and close down activities as detailed within the CoCP. To maximise the productivity within the core working hours, the 1hr start up and close down periods will include activities such as deliveries, workforce arrival/departure, unloading, maintenance and general preparation works etc. During this period plant and machinery that is likely to cause disturbance to local residents will not be allowed

to operate. This period will not be an extension of the core working hours. Working outside of these hours would need to be agreed through the Section 61 consenting process with LBB. Emergencies (not repairs and maintenance) may be undertaken outside core hours.

5.3.4 Certain work activities at the Canterbury Works vent shaft site will need to take place outside of the core working hours for safety and engineering purposes. These work activities (which may include construction associated with infrastructure works and rail works, including Possessions) will be covered by the Section 61 process and are likely to include works such as piling, diaphragm walls and major concrete pours associated with the vent shaft construction.

5.3.5 In addition, to support modification works of existing railway infrastructure at Euston, once operational, the F-sidings North of Old Oak Common will facilitate railway infrastructure works required to take place at night, weekends or during bank holidays.

5.3.6 Road Rail Vehicles (RRVs)³ will generally be delivered and operated outside of normal working hours for works associated with the existing railway. Material delivery and removal for these works interfacing with conventional rail will be carried out during the same periods.

5.4 Construction Site Layout and Good Housekeeping

5.4.1 The measures set out in Section 5.3 of the CoCP will be used to reduce the likelihood of an environmental incident or nuisance occurring.

5.5 Site Lighting

5.5.1 All construction sites will be lit in accordance with the requirements of the CoCP as detailed within Section 5.4 and approval of site lighting in Schedule 17 Part 1 of the High-Speed Rail (London – West Midlands) Act (the Act).

5.5.2 Site lighting will be designed to avoid light pollution to surrounding buildings, ecological receptors, local residents, railway operations, passing motorists, pedestrians, cyclists and other sensitive land uses, where reasonably practicable.

5.6 Worksite Security

5.6.1 The intention is to achieve safe and secure worksites, with balanced and appropriate security measures that are commensurate with the risk, as detailed within Section 5.5 of the CoCP.

- 5.6.2 A security plan will be required for each site and where appropriate, security fencing and gates provided to perimeters of construction locations and site compounds. Fence type and construction will be appropriate to the level of security required and depend upon the likelihood of intruders, level of danger and visual impact to the environment.
- 5.6.3 Contractors will be responsible for ensuring that the site/working areas and plant and materials are secure from use by unauthorised persons at all times and plant machinery will be securely locked away and immobilised each night. Securing sites will involve the use of physical, electronic and human resources in a proportionate and cost-effective manner.
- 5.6.4 In some situations, particularly in an urban setting, consideration will be given to extra visibility for the public and workforce at night e.g., use of half-timber / half-infill (i.e., Perspex) at hoarding corners together with convex mirror to prevent blind spots. All sites will have security lighting to ensure the safety of passing pedestrians and other traffic.
- 5.6.5 Security provisions will be deployed at all HS2 sites and working areas on a 24/7 basis, this may include CCTV cameras, alarms and security personnel. This approach will help protect assets with measures that deter, delay and detect intrusion.

5.7 Hoardings, Fencing and Screening

- 5.7.1 The site perimeter will generally be fenced with 2.4m high solid hoardings that will be appropriately decorated, in line with measures described within Section 5.6.1 of the CoCP, if appropriate.
- 5.7.2 At the Canterbury Works vent shaft site, taller hoardings will be erected along the along the construction site boundary between the construction site at Canterbury Works and the residential communities as well as the boundary with St Mary's Catholic Primary School to provide further noise mitigation.
- 5.7.3 At locations where existing fencing may need to be removed suitable alternatives will be used.
- 5.7.4 The type of fence will be dependent upon the nature of use of the adjacent land, as well as environmental, design and safety considerations.
- 5.7.5 Opportunities to include temporary landscaping measures including but not limited to green hoardings, ivy screens, artificial ivy and instant hedging will be considered and where reasonably practicable implemented where there are clear benefits to local air quality, biodiversity and visual appearance of the area, taking into account costs, longevity and ease of maintenance.

5.8 Unexploded Ordnance

5.8.1 A risk assessment for the possibility of unexploded ordnance being found within construction areas will be carried out, as detailed within Section 5.7 of the CoCP.

5.9 Electromagnetic Interference

5.9.1 The impacts of electromagnetic interference during design and construction will be undertaken, as detailed within Section 5.8 of the CoCP.

5.10 Temporary Living Accommodation

5.10.1 There will be no temporary living accommodation for construction workers in LBB.

5.11 Occupational Healthcare

5.11.1 The Nominated Undertaker will ensure there is provision for access to either on-site or near site occupational healthcare for site workers, as detailed within Section 5.10 of the CoCP.

5.12 Clearance and Re-statement of Sites on Completion

5.12.1 This will be carried out as detailed within Section 5.11 of the CoCP.

5.13 Pollution Incident Control and Emergency Preparedness

5.13.1 The Contractors' pollution incident control and emergency preparedness plan(s) will need to have due regard to local receptors as detailed in Sections 6 to 16 of this LEMP.

5.13.2 The Contractors will also consider measures and processes to be implemented in the event of environmental non-conformances.

5.14 Local control measures

5.14.1 The Contractor's pollution incident control and emergency preparedness plan(s) will need to include the following pollution prevention and control mechanisms:

- Static plant will be used with secondary containment measures such as plant nappies to retain any leakage of fuel or oil to reduce the risk of pollution;
- Spill kits will be provided where appropriate at four main and ten satellite compounds, to reduce the risk pollution; and
- The use of oil interceptors at site offices and work compounds.

The Contractors' pollution incident control and emergency preparedness plan(s) will need to have due regard to local context, such as the fact that the whole area

is a nitrate vulnerable zone which is an area where nitrate pollution is a potential problem.

5.15 Fire Prevention and Control

5.15.1 The Contractors' will ensure all construction sites and associated accommodation and welfare facilities will have in place appropriate plans and management controls to prevent fires. See also section 5.13 of the CoCP.

5.16 Extreme Weather Events

5.16.1 The Contractors' pollution incident control plan and emergency preparedness plan will need to have due regard to the potential for extreme weather events and subsequent impacts on key receptors taking into account any proposed risk management or mitigation measures. See also Section 5.14 of the CoCP. Where necessary, the statutory bodies will be consulted with regards to emergency planning.

5.17 Carbon Management Plans

5.17.1 The Contractors will produce carbon management plans, in accordance with the HS2 Carbon Minimisation Policy as detailed within Section 5.15 of the CoCP.

5.18 Interface Management between Adjacent Construction Areas

5.18.1 The Nominated Undertaker will oversee the interface between the Contractors as detailed within Section 5.16 of the CoCP, which may be within the same or adjacent Local Authority boundaries.

6 Agriculture, Forestry and Soils

6.1.1 General control measures relating to agriculture, forestry and soils are provided in Section 6 of the CoCP.

6.2 Sensitive Receptors

6.2.1 There is no agricultural land likely to be affected within Brent.

6.3 Local Control Measures

6.3.1 In respect of storage areas for soil and excavated materials, and within the wider construction site, the presence and spread of invasive, non-native species (plants and animals) and noxious weeds will be controlled through the adoption of an appropriate management regime.

- 6.3.2 Appropriate construction, handling, treatment and disposal procedures will be implemented in relation to invasive species and noxious weeds. Route-wide measures will also be implemented to promote biosecurity and reduce the risk that invasive non-native species and diseases are spread as a consequence of the project. Further details are provided in the CoCP.

7 Air Quality

- 7.1.1 General control measures relating to air quality are provided in Section 7 of the CoCP.
- 7.1.2 Contractors will be required to manage dust, air pollution, odour and exhaust emissions during the construction works in accordance with Best Practicable Means (BPM) and refer to current publications on 'best practice'².

7.2 Sensitive Receptors

- 7.2.1 The Contractors' working methods will have due regard to local sensitive receptors where there may be impacts due to dust emissions from construction works and exhaust emissions of air pollutants from construction traffic vehicles travelling to and from construction areas.
- 7.2.2 For air quality, relevant sensitive receptors include locations where there are residential properties, other types of property where there is human exposure over extended periods, for example hospitals and schools, and locations where there are designated ecological sites with sensitive vegetation. The potential impacts are considered in terms of dust soiling on people and property; human health effects of dust and air pollutant emissions; and effects of dust deposition on vegetation.
- 7.2.3 The construction works within LBB have been assessed to determine the risk of impacts due to construction dust. The construction sites have been classified as 'low', 'medium' and 'high' risk using the Institute of Air Quality Management (IAQM) methodology⁵, in relation to emissions of dust from construction and demolition activities. Canterbury Works vent shaft site has been assessed as 'medium risk' for the current stage of work. . The mitigation measures as set out in the CoCP will be employed, which includes indicative continuous monitoring of dust to allow active management of the construction works. Sensitive receptors at this location include St Mary's Catholic Primary School and residents along Canterbury Terrace and Canterbury Road.

² Guidance on the assessment of dust from construction and demolition: Institute of Air Quality Management (IAQM), February 2014
Air Quality Monitoring in the Vicinity of Demolition and Construction Sites: IAQM, November 2012
The Control of Dust and Emissions during Demolition and Construction: GLA Supplementary Planning Guidance Document, July 2014

7.2.4 Construction traffic emissions will have impacts at receptors adjacent to routes used by construction vehicles and where traffic is diverted or rerouted associated with construction traffic routes for Old Oak Common works.

7.3 Local Control Measures

7.3.1 All the relevant methods outlined within the CoCP will be applied to control and manage potential air quality effects. In LBB the key measures will include:

- compliance with required construction vehicle and Non-road Mobile Machinery (NRMM) emission requirements;
- damping down of dust-generating equipment and vehicles within the site and the provision of dust suppression measures in all areas of the site that are likely to generate dust;
- measures to keep roads and accesses clean; covering materials, deliveries or loads entering and leaving the construction site by road and rail;
- the enclosure, shielding or provision of filters on plant likely to generate dust beyond the site boundaries; the use of diesel or petrol-powered generators will be reduced by using mains electricity or battery-powered equipment where reasonably practicable.

7.3.2 Dust suppression measures and works screening will be subject to approval in accordance with Schedule 17 of the Act. Further measures are detailed within Section 7 of the CoCP.

7.3.3 HS2 has set emission requirements and targets for the engines of contractor cars, vans, and heavy road vehicles. These have been developed for the whole route and are categorised as follows: London Low Emission Zone, Clean Air Zone and Rest of Route.

7.3.4 For the LBB the relevant category of vehicle emission standard is the London Low Emission Zone. Within the London Low Emission Zone there are requirements for heavy road vehicles to be powered by EURO VI (or cleaner) engines and for cars and vans to be Euro 6 diesel and Euro 4 petrol⁶. There are also targets for the use of Ultra Low Emission Vehicles.

7.3.5 HS2 has also set requirements for [Non-road Mobile Machinery](#) NRMM (i.e., stationary plant and off-road vehicles). These have been developed for the whole route and are categorised as follows: Central Activity Zone, Rest of Greater London and Rest of Country. For the LBB the relevant category of NRMM emission standard is the Rest of Greater London and the requirement is for NRMM to be powered by EU Stage IV from 2022⁷.

- 7.3.6 The HS2 Information Paper E31: Air Quality gives further information on the HS2 emissions standards.

7.4 Monitoring Procedures

- 7.4.1 An inspection and monitoring programme will be implemented by the Contractors to assess the effectiveness of the control measures as outlined in the CoCP. In LBB the monitoring procedures include monitoring of nitrogen dioxide around highways and continuous automatic monitoring of airborne dust, including the setting a relevant site action level for dust (defined as a dust measurement threshold above which investigation will be required). The monitoring being undertaken by HS2 supplements existing air quality monitoring which is part of national and local authority surveys. The monitoring programme, including locations, will be discussed with LBB prior to construction.

- 7.4.2 The HS2 monitoring of nitrogen dioxide around highways commenced in June 2016 and is being undertaken using diffusion tubes. There are currently four monitoring locations within LBB and includes locations where the environmental statement, as amended, identified significant effects, certain locations not expected to be affected by the scheme for comparison purposes, and locations co-located with automatic monitoring sites which are part of national and local authority surveys for comparison purposes. The monitoring programme, including locations for dust monitoring is in the process of being agreed. Monthly reports of monitoring data from HS2 air quality surveys are made publicly available throughout construction.

- 7.4.3 Locations of the air quality monitors will be included in the monthly reports, which are uploaded onto the HS2 website <https://www.gov.uk/government/organisations/high-speed-two-limited>.

8 Cultural Heritage

- 8.1.1 General control measures relating to cultural heritage are provided in Section 8 of the CoCP. Further control measures for Cultural Heritage are provided in the HS2 Phase One Heritage Memorandum within the Environmental Minimum Requirements and the specific documents identified therein.

- 8.1.2 A route-wide Generic Written Scheme of Investigation: Historic Environment Research and Delivery Strategy (GWSI:HERDS) has been prepared which sets out the general principles for design, evaluation, mitigation, analysis, reporting and archive deposition to be adopted for the design development and construction of the Scheme.

- 8.1.3 HS2 works will affect both designated and non-designated assets in Brent. Full details of the works to be undertaken (i.e., archaeological investigations and built heritage recording) will be determined during the detailed design and will be set out in Project Plans, Location-Specific Written Scheme of Investigations (LS-WSI) and Heritage Agreement Method Statements (HAMS).
- 8.1.4 Works associated with the Scheme will impact both designated and non-designated archaeological and built heritage assets in LBB. Full details of the works to be undertaken (i.e., archaeological investigations and built heritage recording) will be determined during the detailed design and will be set out in Project Plans, Location-Specific Written Scheme of Investigations (LS-WSI) and Heritage Agreement Method Statements (HAMS).
- 8.1.5 Schedule 18 and Schedule 19 to the Act concern how legislation in respect of listed buildings and scheduled monuments respectively apply to the Phase One works. Schedule 20 to the Act provides a regime for the removal of human remains and related funerary monuments.

8.2 Sensitive Receptors

- 8.2.1 Details of all designated and non-designated heritage assets within 500m of the land required, temporarily or permanently, for the construction of the Scheme are listed in Volume 5 of the ES (Appendix CH-002-004 and Cultural Heritage Map Book – Euston and London Metropolitan, ES 3.5.1.4.1).
- 8.2.2 The Scheme passes through four conservation areas: Kensal Green (KIL001), South Kilburn (KIL002), Kilburn (KIL004) and Queens Park (KIL006).
- 8.2.3 Contractors will have due regard for the following designated heritage assets:
- Three Grade II listed buildings/structures:
 - 10 Cambridge Avenue;
 - Cambridge Hall, Cambridge Avenue; and
 - 842 Harrow Road

8.3 Local Control Measures

- 8.3.1 Where practicable, construction methodologies will be required to reduce the impacts on heritage assets. The CoCP sets out the provisions that will be adopted to control those effects, including the use of appropriate equipment and methods to limit ground disturbance and settlement followed by monitoring, protection and remediation. A

programme of settlement monitoring and the implementation of avoidance measures where appropriate will be undertaken by the Contractor. Detailed provisions with regard to settlement and listed buildings are outlined in the Settlement Policy / HS2 Information Paper: C3 Ground Settlement.

8.3.2 Those listed buildings which may require works to maintain or restore their character, or for the affixing of monitoring apparatus are named in Table 2 of Schedule 18 of the Act. Listed buildings named in Table 2 are also covered by a Heritage Agreement with LBH, which sets out arrangements for obtaining approvals for protective or monitoring works to these buildings

8.3.3 If required, the programme of archaeological and built heritage works will be undertaken by a specialist Contractor appointed by the nominated undertaker prior to and during, the construction period in accordance with the provisions of the Location-Specific Written Scheme of Investigation for archaeology and built heritage.

8.4 Monitoring

8.4.1 Appropriate monitoring of heritage will be undertaken as necessary, as detailed within Section 8.4 of the CoCP.

9 Ecology

9.1.1 General control measures relating to ecology are provided in Section 9 of the CoCP.

9.2 Sensitive receptors

9.2.1 The following locations which lie within or are adjacent to the Scheme in LBB are designated for nature conservation. These locations are shown within the Volume 5 map books of the ES (3.5.1.5.4 and 3.5.1.5.5):

- Railside Habitats: Harlesden to Wembley Central, including Wembley Brook Site of Borough Importance Grade I (SBI.I) – comprise part of the network of railside habitats in Brent. The railside supports a mosaic of scattered trees, scrub, semi-improved neutral grassland, tall herbs and bare ground, the proportions depending on the substrate and the frequency and nature of management. Three main types have been identified within the railway land comprising varying complexes of scrub, rough grassland tall-herb ruderal vegetation and bare ground. This habitat is approximately 300m northwest of the Willesden Euro Terminal (WET) site; and;
- Abbey Road Mound and Bestway Park SBI.II – comprises a grassy embankment alongside a footpath. Scrub, semi-improved grassland, tall herbs and ruderal

vegetation are present along with planted ornamental and native shrubs.

9.2.2 Sensitive habitat receptors outside of designated sites are displayed within the Volume 5 map books of the ES (3.5.1.5.6 and 3.5.1.5.7). These include:

- Broadleaved woodland, present along railsides; and;
- Mosaic and transition habitats: three main habitat types have been identified within the railway land comprising varying complexes of scrub, rough grassland tall-herb ruderal vegetation and bare ground. Railside habitats are a Brent BAP habitat.

9.2.3 Key protected or important species known or assumed to occur in the vicinity of the works are:

- Breeding birds; and
- common reptiles;

9.2.4 Further information on designated sites and legally protected species occurring in this area can be found within Volumes 2 and 5 of the ES.

9.2.5 Contractors will be required to check whether any protected species licences are required prior to work commencing or where such licences have been obtained, to ensure compliance with the requirements of the licence.

9.2.6 All actions required to comply with licences, will be undertaken by suitably qualified specialist ecologists licensed to undertake the work.

9.3 Local control measures

9.3.1 The standard ecological issues and associated control measures outlined in Table 1 are of particular relevance to LBB.

Table 1: Standard ecological issues and control measures relevant to LBH

Species/species group	Issue	Standard control measure
Designated Sites	The Scheme affects non-statutory wildlife sites.	<p>Measures to reduce habitat loss should be included in planning of construction works, such as avoiding siting temporary material stockpiles, construction materials and vehicle parking within designated sites.</p> <p>Potentially hazardous materials should also be located away from designated sites and stored correctly.</p> <p>Specific measures for control of surface water and for air and water-borne pollution should also take account of the proximity of these designated sites.</p>
Breeding birds	<p>The nests and eggs of all bird species are legally protected against being damaged or taken. Some species are specially protected against disturbance whilst nesting.</p> <p>The Scheme will result in the loss of nesting bird habitat, including vegetation, buildings and structures.</p>	<p>Habitat clearance should be conducted outside of the bird nesting season (March to August inclusive) where practicable.</p> <p>If habitat clearance is carried out during the bird nesting season, then an appropriate Working Method Statement shall be completed in advance of clearance works commencing.</p>
Common reptiles	Common species of reptile (grass snake, adder, common lizard and slow worm) are protected from intentional killing or injury.	Where works have the potential to kill or injure reptiles, but there is suitable habitat immediately adjacent to the work site that could support a viable population (with enhancements where necessary) the Habitat Manipulation and Displacement approach should be followed. A Working Method Statement

	Common reptiles are widespread, and the Scheme will result in the loss of confirmed and potential reptile habitat.	should be produced in advance of works commencing. Where there is no suitable habitat immediately adjacent to the work site, the Reptile Translocation approach should be followed. A Working Method Statement should be produced in advance of works commencing. This will include details of the approach, any exclusion fencing required, and details of the receptor site.
General	Unexpected discovery of legally protected species during works.	There will be a procedure to follow in the unexpected event that protected species are identified during construction. This will include seeking appropriate licences and consulting with Natural England. Unexpected finds of great crested newts or badgers are covered by the organisational licences and works must be in accordance with those licences.

9.3.2 Further information on the control of ecological impacts is provided in HS2 Information Paper E2: Ecological Impact, Section 9 of the CoCP, in Technical Note: Ecological principles of mitigation within Volume 5 of the ES and SES3 and AP4 ES (Scope and methodology report addendum (CT-001-000/2)).

9.3.3 It is likely that specific control measures will also be contained within the Contractors' Site management plans.

9.4 Monitoring

9.4.1 Contractors will be required to undertake appropriate monitoring of the consequences of construction works on ecological resources and of the effectiveness of the management measures designed to control ecological effects, as detailed within Section 9.3 of the CoCP.

10 Ground Settlement

- 10.1.1 General control measures relating to ground settlement are provided in Section 10 of the CoCP. Specific measures to reduce and repair settlement and requirements with regard to assessment, surveys and monitoring are contained in the Settlement Policy / HS2 Information Paper C3: Ground Settlement.
- 10.1.2 Requirements for monitoring will be confirmed by the settlement report prepared during the detailed design stage. Where determined as necessary, monitoring will be undertaken on selected adjacent buildings, structures and the conventional railway tracks. Baseline readings will be taken prior to the commencement of excavation.
- 10.1.3 The monitoring strategy, methodology and programme, including the choice and location of monitoring equipment, will be discussed and agreed with the local authorities and land/building owners prior to commencement of construction.
- 10.1.4 Where significant building movement is predicted to be caused by excavation induced ground movements, ground treatment/improvement techniques might be required to ensure that if ground movement occurs, it stays within agreed and acceptable limits thereby limiting the impacts on buildings.
- 10.1.5 Monitoring may be required where existing sensitive buildings/structures/utilities are in close proximity to the planned excavation works. An assessment of the sensitivity of each building/structure/utility in close proximity to the excavation works will be carried out at the detailed design stage. This will then inform the design/specification of the monitoring system for that building/structure/utility and will also inform the design of any movement mitigation works if these are deemed necessary by the designer.
- 10.1.6 Prior to the commencement of construction, structural surveys and condition/defect surveys are commissioned where structures are at risk of potentially damaging settlements.

11 Land quality

- 11.1.1 Further land quality study work including intrusive ground investigation (where needed) and analysis will be conducted prior to construction in order to confirm areas of suspected land contamination that could be disturbed or encountered during construction of the Scheme. Contaminated sites beyond the Scheme will be considered only in terms of their potential impact on the Scheme. If new constraints are identified then the LEMP would be updated accordingly, to date none have been identified. No contaminated sites (in accordance with the meaning defined in Part IIa of the

Environmental Protection Act, 1990) have been formally identified by the Regulator (in accordance with the Contaminated Land (England) Regulations 2000) within the Scheme.

11.1.2 General control measures relating to land quality are provided in Section 11 of the CoCP.

11.2 Potential Contamination Sources and Sensitive Receptors

11.2.1 The following land with potentially contaminative existing or historical uses has been identified as a prospective contaminative risk to HS2 works (and can be seen in Volume 5 map book of the main ES (LQ-001-004 – LQ-001-005):

- Former and existing on-site railway land overlying the London Clay Formation; and
- Former on-site warehouse, garage and motor works at the Canterbury Works shaft site;

11.2.2 With regard to the above identified contaminative risks, the Contractors will have due regard to the following sensitive receptors:

- People, including residents in existing properties, local employees, e.g., at the existing railway, construction and/or maintenance workers;
- Controlled waters, including groundwaters in The Chalk bedrock (principal aquifer) and various Secondary A aquifers;
- The built environment, including buildings, property and underground structures and services;
- The natural environment, generally.

11.3 Local Control Measures

11.3.1 Ground investigations are being undertaken to confirm areas of potential contamination within the Scheme. Following development of a conceptual ground model, risk assessment and a remedial strategy will be prepared, as needed. Consultation with the LBH and the Environment Agency should take place, as appropriate, during the formulation of the remedial strategy, which will include measures to be taken if unexpected contamination is encountered as outlined in Section 11 of the CoCP.

11.3.2 Contaminated soils or groundwater excavated from the site are to be separated from other materials and, wherever reasonably practicable, will be reused within the

Scheme, where needed and suitable for use. Treatment techniques are likely to include stabilisation methods, soil washing and appropriately permitted bioremediation to remove oil contaminants. Contaminated soil disposed off-site will be taken to a soil treatment facility, another construction site (for licensed treatment, as necessary, and reuse) or an appropriately permitted landfill site.

11.3.3 Both tunnelling and excavation will be required in LBB. Should the ground investigation discover contaminated materials within the area required to construct the works in these locations, it will be excavated, then treated and re-used, or removed, as appropriate. In addition, ground (landfill) gas and/or leachate control systems will be constructed where necessary to manage ingress to the Scheme or control migration pathways external to the works where pathways have been affected adversely by the construction.

11.3.4 Similar measures will be undertaken at other sites where contaminated soils or groundwater are identified during the investigation and / or construction processes.

11.4 Minerals

11.4.1 There is no record of mining or quarrying activities being undertaken within LBB, and no identified active mining or mineral sites or Preferred Areas (PA).

12 Landscape and Visual

12.1.1 General control measures relating to landscape and visual are provided in Section 12 of the CoCP.

12.2 Sensitive Receptors

12.2.1 With reference to the set-up and location of temporary works, the Contractors will have due regard to limiting impacts of the character of the following landscape character areas (LCAs):

- North Acton Industrial and Commercial LCA;
- Kilburn Lane and Carlton Vale Post-War Residential and Commercial LCA; and
- Paddington Cemetery and 19th Century/Pre-War Residential LCA.

12.2.2 The Contractors will also have due regard to limiting visual intrusion on the following visual receptors:

12.2.3 Residents in the area of the Canterbury Works vent shaft, including those along Canterbury Road, Chichester Road, Canterbury Terrace, Albert Road and Cathedral Walk;

- Users of St Mary's Catholic Primary School, adjacent to the Canterbury Works vent shaft site;
- Users of the cycle bridge over North Circular near the F-sidings satellite compound;
- People travelling through the area; and
- Employees in commercial units, such as BestWay Store and commercial and industrial estates at Northfield Industrial Estate, near the F-sidings satellite compound.

12.3 Local Control Measures

12.3.1 Measures that have been incorporated into the CoCP to avoid or reduce landscape and visual effects during construction include the following (see Volume 5):

- Maximising the retention and protection of existing trees and vegetation where possible;
- Use of well-maintained hoardings and fencing;
- Designing lighting to avoid unnecessary intrusion onto adjacent buildings and other land uses;
- Replacement of any trees intended to be retained which may be accidentally felled or die as a consequence of construction works;
- Appropriate implementation, establishment and maintenance of planting and seeding works and implementation of landscape management measures, to continue through the construction period as landscape works are completed;
- Temporary bunds to be positioned to screen views to the route construction;
- The design of construction compound layouts to reduce visual and other impacts where practicable; and
- The specific location of temporary material stockpiles to reduce visual impacts.

12.4 Trees

- 12.4.1 The Contractors will give consideration to where trees and other planting can be established early in the construction programme. For example, where trees require removal due to utility works early in the programme, replacement trees will be provided at the earliest possible opportunity, where reasonably practicable. The Nominated Undertaker will ensure any early planting during construction is maintained to promote healthy growth.
- 12.4.2 Where practicable, the Contractors will carry out surveys and determine the details of tree retention and protection measures, in accordance with BS 5837:2012 Trees in relation to design, demolition and construction, with LBB, in advance of any works in the vicinity of trees.

12.5 Site Buildings for Office Welfare

- 12.5.1 Site buildings will generally be of a temporary modular type; they will typically be multi-storey to maximise construction space and limit land take.

13 Noise and Vibration

- 13.1.1 General control measures relating to noise and vibration are provided in Section 13 of the CoCP and additional information is provided in Information Paper E23: Control of construction noise and vibration.

13.2 Sensitive Receptors

- 13.2.1 Noise and vibration construction assessment locations, at sensitive residential and non-residential properties, are identified in the main ES on plan(s) SV-03-004 and SV-03-003b within Noise and Vibration Volume 5 map book (ref.: ES 3.5.1.9.1) and in the SES₃ and AP₄ ES Volume 5: Appendix SV-003-004. For further details of these receptors and the potential adverse impacts identified, refer to the main ES, Volume 2: CFA₄ Report and CFA₅ Report; and the SES₃ and AP₄ ES, Volume 2: CFA₄ Report.
- 13.2.2 Noise insulation is being offered for qualifying buildings as defined in the noise insulation and temporary rehousing policy within HS2 Information Paper E23. Noise insulation or ultimately temporary rehousing will mitigate residents being significantly affected by levels of construction noise inside their dwellings;
- 13.2.3 Approximately 65 residential properties qualified and were offered noise insulation in LBB. Work is ongoing to ensure noise insulation is installed within all eligible properties.

13.2.4 The following have been reported in the ES and SES₃ and AP₄ ES as likely to qualify for noise insulation measures:

- One terraced building (approximately 40 dwellings) on Canterbury Terrace
- Canterbury House (approximately 20 dwellings); and
- One terraced building (approximately 40 dwellings) on Brondesbury Villas.

13.2.5 Recent assessments suggest continuing improvements in predicted noise levels and any confirmation of changes to noise insulation measures will be reflected in this LEMP as required.

13.2.6 The following residential communities are forecast to experience direct adverse effects during construction of the Canterbury Works vent shaft:

- Approximately 40 dwellings on Canterbury Terrace;
- Approximately 100 dwellings on Canterbury Road;
- Approximately 40 dwellings on Brondesbury Villas; and
- Approximately 20 dwellings in Canterbury House.

13.2.7 The SES₃ and AP₄ ES has also reported likely adverse impacts from construction noise at St Mary's Catholic Primary School on Canterbury Road.

13.3 Local control measures

13.3.1 Site specific best practicable means measures to control noise and vibration have been identified through the Parliamentary process and discussions with LBB and local stakeholders and reflected in this document. Furthermore, site specific measures will be identified by the Contractors on a site-by-site and activity-by-activity basis and agreed with LBB through the Section 61 process. As identified in the ES, examples of best practicable measures that may be employed by the Contractors to control noise and vibration include:

- Controlling noise and vibration at source - for example the selection of quiet and low vibration equipment, review of construction programme and methodology to consider quieter methods;
- Arranging the layout of compounds to reduce noise impacts where construction compounds are in close proximity to noise sensitive receptors. This may include placing any stacked portacabins between noisy works and sensitive receptors; and
- Additional height hoardings which may, on occasion, be used to control

construction noise. These will be subject to approval in accordance with the requirements of Schedule 17 Part 1 of the Act.

In addition to the above stated measures, specific measures in the form of:

- Use of an electric handling crane for the shaft sinking and adit construction at Canterbury Road Vent Shaft.

Designing bespoke enclosures for fixed items of SCL plant at Canterbury Road Vent Shaft Site.

- 13.3.2 Properties that qualify for noise insulation packages will be periodically reviewed, including following any material changes in the proposed construction method and the local control measures and appointment of the Contractors.

13.4 Monitoring

- 13.4.1 The Nominated Undertaker requires its Contractors to undertake and report such monitoring as is necessary to ensure and demonstrate compliance with all noise and vibration commitments and the requirements of the CoCP.

- 13.4.2 As set out in section 4.3.10 of the CoCP, where the nominated undertaker's Contractors are monitoring noise, dust and air quality with equipment capable of streaming data in real time, this will be made available to LBB if a written request is received by the nominated undertaker. In addition, monthly noise monitoring reports will be made publicly available throughout construction. The monthly reports will include information such as measurement methodology and monitoring locations.

- 13.4.3 All noise and vibration monitoring equipment should hold a valid calibration certificate issued by either a United Kingdom Accreditation Service (UKAS) accredited calibration laboratory or equipment manufacturer.

- 13.4.4 Monthly noise monitoring reports detailing monitor locations and results will be uploaded to <https://www.gov.uk/government/organisations/high-speed-two-limited>. And <https://data.gov.uk/dataset/24542ae7-dd44-444f-b259-871c4cc43b5e/environmental-monitoring-data> respectively.

14 Traffic and transport

- 14.1.1 A number of transport and traffic plans will be prepared, in accordance with the Code of Construction Practice, Section 14. A Route-wide Traffic Management Plan (RTMP)

will set out the strategic requirement that the Contractors will need to follow, which will be consulted on with all highway authorities through the Highways Subgroup to the Planning Forum.

14.1.2 Local Traffic Management Plans (LTMPs) will set out how traffic will be managed on a sub-regional level. LTMPs will be consulted through local Traffic Liaison Group meetings. Consultation, consents and notifications for site specific highway works will be undertaken via the local Traffic Liaison Group.

14.1.3 Information on how the local impacts of construction will be mitigated, in particular those associated with the removal of excavated and demolition materials, delivery of construction materials, and construction offices will be included within the LTMP or on a site-specific basis.

14.1.4 Site specific traffic management measures, as detailed within the CoCP, will be discussed with highway authorities and the emergency services via local meetings.

14.1.5 General control measures relating to traffic and transport are provided in Section 14 of the CoCP. Information relating to construction traffic is also provided in Information papers:

- D11: Maintaining access to residential and commercial property during construction;
- E13: Management of traffic during construction;
- E14: Highways and traffic during construction – legislative provisions; and
- E30: Vehicle flow management and safety requirements during construction.

14.2 Local Control Measures

Sensitive Receptors

14.2.1 In relation to traffic and transport, key sensitive receptors will need to be considered when the Contractors develops the LTMP. These receptors include:

- Road users on:
 - LTubbs Rd/Nightingale Rd.
- Non-motorised users on:
 - LA4000 Victoria Road and Wales Farm Rd; and
 - Cannel Gate Rd.

Site Access

- 14.2.2 A number of vehicle access points to the construction sites will be required so construction vehicle movements will be spread over a number of roads within the area of works in LBB. Highway access notifications and/or approvals will be undertaken in accordance with Schedule 4 of the Act.
- 14.2.3 Routes for construction traffic will be subject to approval of the relevant planning authority in accordance with Schedule 17 of the Act when large construction vehicle movements exceed 24 single movements (12 two-way movements) per day and/or from a site.
- 14.2.4 Any permanent highway works outside the limits of deviation as outlined in the Act will be subject to normal Highways legislation and Highway Authority powers.

14.3 Works to the Highway and Access Measures

- 14.3.1 No temporary road or Public rights of way (PRoW) closures or diversions are likely to be required in LBB.

14.4 Monitoring procedures

- 14.4.1 Each Contractor will be responsible for monitoring to ensure compliance with the relevant requirements of the RTMP, LTMP, the requirements of the provisions of the Act, undertakings and assurances, site specific drawings and site-specific traffic requirements and conditions.

15 Waste and Materials

- 15.1.1 All waste will be managed in accordance with the waste hierarchy which aims to reduce waste at source and to reduce the quantity that requires final disposal to landfill. This applies to excavated material arising on-site, which will be reused within the Scheme as far as reasonably practicable, as well as material from demolition and construction activities. This approach is described in greater detail in the HS2 Phase One Information Paper E3: Excavated Material and Waste Management and in Section 15 of the CoCP.

15.2 Local Control Measures

Testing and classification of materials

- 15.2.1 The 'basic characterisation'³ of excavated material will be determined by the Contractor to ascertain the potential for reuse, recycling, recovery or disposal to inert, non-hazardous or hazardous landfill.
- 15.2.2 A Materials Management Plan will be developed in accordance with the Definition of Waste: Development Industry Code of Practice⁴ to set out the processes to be adopted in respect of the reuse of excavated materials either on the Scheme or transferred to another development site.
- 15.2.3 In the event that excavated material is to be sent for disposal, which shall be the option of last resort, testing and classification of will be undertaken by the Contractor in line with the Environment Agency's guidance. This includes:
- Waste Sampling and Testing for Disposal⁵; and
 - Technical Guidance WM₃ – Guidance on the classification and assessment of waste (1st edition 2015)⁶.

Transport of Waste and Materials

- 15.2.4 Opportunities for the off-site re-use of surplus excavated material will be identified and utilised where reasonably practicable. Surplus excavated material will only be sent to landfill as an option of last resort. Further detail on the approach to the management of all excavated material may be found in the HS2 Phase One Information Paper E3: Excavated Material and Waste Management.

16 Water resources and flood risk

- 16.1.1 General control measures relating to water resources and flood risk are provided in Section 16 of the CoCP.

³ Basic characterisation' refers to the characterisation of excavated material to help define the type of re-use for which it is suitable (e.g., DMRB soil classes). Characterisation of waste would include the allocation of an EWC code (in accordance with The List of Wastes (England) Regulations 2005 SI No. 895) and a detailed evaluation of the waste properties. The latter is based on a combination of the detailed knowledge of the source process and chemical testing.

⁴ CL:AIRE Definition of Waste: Development Industry Code of Practice, version 2, March 2011

⁵ Environment Agency (2013), Waste Sampling and Testing for Disposal to Landfill, March 2013.

⁶ Environment Agency (2015), Technical Guidance WM₃ – Guidance on the classification and assessment of waste (1st edition 2015) (1st Edition 2015).

16.2 Sensitive Receptors

16.2.1 The Contractors will have due regard to the following sensitive local water resource receptors:

- Local aquifers, including Lambeth Group (secondary A aquifer), Thanet Sand Formation (Secondary A aquifer); and White Chalk Subgroup (Principal aquifer);
- Abstractions, including two licensed groundwater abstractions near Park Royal, on the boundary of LBB and LB Ealing;
- Surface watercourses, including River Brent; and
- Artificial water bodies, including: Grand Union Canal (Paddington Arm)

16.2.2 The Contractor's pollution incident control plan will have due regard to the local flood risk sources (i.e., surface, artificial, groundwater and sewers) and key receptors and take into account any proposed risk management and/or mitigation measures.

16.2.3 The Contractors will have due regard to the following local flood water receptors and their respective flood histories:

- Surface water – The flood map for surface water and preliminary flood risk assessment modelling suggests that there are areas within this study area that have a high risk of surface water flooding. Surface water flood risk locations are identified on plans WR-01-004 and WR-01-005 within water resources – London- West Midlands Map book ref: ES 3.5.1.11.1;
- In the vicinity of the Canterbury Works vent shaft site there are areas at risk of surface water flooding although the proposed vent shaft itself is not shown to be located within an area at risk of surface water flooding. The updated Flood Map for Surface Water (uFMfSW) identifies a risk of surface water flooding along Canterbury Road during a 1 in 100 years return period (1% annual probability) rainfall event and Canterbury Terrace, including the surrounding works buildings, during a 1 in 1000 years return period (0.1% annual probability) rainfall event; and
- Sewers (Thames Water Utilities Ltd) - Thames Water Utilities Ltd historical sewer flooding records show that there have been a number of sewer flooding incidents in the study area.

16.3 Potential Sources of Contamination

16.3.1 Potential sources of contamination are detailed within Section 11 of this LEMP.

16.4 Local Control Measures

- 16.4.1 Measures identified in Section 16 of the CoCP, including detailed method statements, will aim to reduce potential adverse effects on surface water or groundwater quality or flows associated with construction; this will include release to groundwater, watercourses of surface water sewers in the surrounding receptors.
- 16.4.2 As outlined in the CoCP, best practice measures will be used (e.g., through the use of silt traps and appropriate attenuation, if required) prior to the discharge of water to watercourses, groundwater or surface water sewers, subject to obtaining the required permits or consents. This could apply to runoff from wheel washing facilities or from general construction activities. As noted in Section 5.7 of this document, a pollution incident control plan will be produced which will incorporate procedures for alerting relevant water supply companies and reducing impacts to public supply Source Protection Zones (SPZs) and local private abstractions in this area.
- 16.4.3 Where there is the possibility that work may affect aquifers, a groundwater monitoring plan will be implemented, as outlined in Section 16 of the CoCP.
- 16.4.4 A programme of groundwater and surface water monitoring will be undertaken prior to, during and following completion of the construction works. The monitoring programme scope and duration will be developed and agreed with the Environment Agency in consultation with relevant stakeholders.
- 16.4.5 If dewatering from excavations is required, it will be carried out in consultation with the Environment Agency and will take into consideration risks posed to water quality or quantity.
- 16.4.6 If required, appropriate guidance will be adhered to, including the Piling and Preventative Ground Improvement Methods on Land Affected by Contamination: Guidance on Pollution Prevention¹². Groundwater and surface water monitoring plans will be prepared, where piling could affect below ground contamination.
- 16.4.7 Temporary excavated material stockpiles, construction compounds and site offices will be located outside of areas at risk of flooding where reasonably practicable, to avoid having an impact on the risk of flooding. Where construction compounds cannot be located outside flood risk areas, there will be a site-specific flood risk management plan prepared prior to construction to manage the potential risks. These plans will take account of the flood risk assessments produced for the ES and include any proposed risk management or mitigation measures, if required.

- 16.4.8 Drainage from the works will be attenuated and discharged to watercourses or sewers, under agreement, at a controlled rate and, where required, with approval of the Environment Agency and, where appropriate, the drainage authority in accordance with Schedule 33 Part 5 of the Act.
- 16.4.9 In certain instances, the excavated retained cut is at a level below the natural ground water table. Mitigation, where necessary with continuous piles or grouting, will ensure that any changes to local groundwater levels and flow are minimised through the use of cut-offs and applying relatively short timescales for dewatering.
- 16.4.10 Additional information, such as how the Scheme complies with the Water Framework Directive, as well as further provisions for engagement with Stakeholders, monitoring and protection of local water resources are outlined in HS2 Information Paper E1: Control of Environmental Impacts and HS2 Information Paper E4: Water resources and flood risk.

17 Appendix 1: Glossary of Terms

Abbreviation	Definition
AP	Additional Provision
CFA	Community Forum Area
CoCP	Code of Construction Practice
CoPA	Control of Pollution Act 1974

Abbreviation	Definition
Contractor	The Contractor on a construction site responsible for planning, managing and co-ordinating themselves and/or the works and all other Contractors working on their site, or any other contractor directly employed by the Nominated Undertaker to undertake key construction works on site.
ES	Environmental Statement
EMS	Environmental Management System
HGVs	Heavy Goods vehicles
HS2	High Speed 2
HS2 Ltd	High Speed Two Limited - is a company wholly owned by the Department for Transport, established in 2009 to develop plans for a new high-speed network and present a proposed route connecting London - West Midlands.
IAQM	Institute of Air Quality Management
IP	Information Paper
LBB	London Borough of Brent
LCAs	Landscape character areas
LEMP	Local Environmental Management Plan
LTMP	Local Traffic Management Plan
MWCC	Main Works Civils Contractor
Nominated Undertaker	The body or bodies appointed to implement the powers of the Act to construct and maintain the railway.
PRoW	Public rights of way
RRVs	Road Rail Vehicles. A vehicle which can operate both on rail tracks and road, often used for railway maintenance
RTMP	Route-wide Traffic Management Plan
SBI	Site of Biological Importance

Abbreviation	Definition
Scheme	The Scheme to which this LEMP relates is the proposed high-speed railway between London - West Midlands. This is a high-speed railway between London - West Midlands with a connection via the West Coast Main Line at conventional speeds to the Northwest and Scotland. It includes four high speed rail stations at London Euston, Old Oak Common (West London), Birmingham Airport (Birmingham Interchange) and Birmingham (Curzon Street).
SCS	Skanska Costain STRABAG
Section 61	Section 61 of the Control of Pollution Act 1974 (which sets out procedures seeking and obtaining Local Authority consent to measures for the control of noise and vibration on construction sites).
SES	Supplementary Environmental Statement
SLI	Site of Local Importance
SMI	Site of Metropolitan Importance
SPZ	Source Protection Zone
TfL	Transport for London
UKAS	United Kingdom Accreditation Service
WSI	Written Scheme of Investigation

18 Appendix 2: Non-exhaustive List of Local Interest and Community Groups in London Borough of Brent

- Transport for London (TfL);
- St Mary's Catholic Primary School;

- Queen's Park Area Residents Association;
- Residents on Chichester, Albert and Canterbury Road;
- North Westminster Action Group Against HS2;
- Brent Housing Partnership; and
- Other representatives of Chichester Road and Canterbury House.

(NB: This list is indicative and will subject to change as more information becomes available).