

# HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

## Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

Volume 2 | Community forum area report

CFA4 | Kilburn (Brent) to Old Oak Common

July 2015

SES and AP2 ES 3.2.1.4



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Department  
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# Structure of the HS2 Supplementary Environmental Statement and Additional Provision 2 Environmental Statement

The Supplementary Environmental Statement (SES) and Additional Provision 2 Environmental Statement (AP2 ES) comprises:

- non-technical summary (NTS). This provides a summary in non-technical language of the SES (Part 1) and AP2 ES (Part 2) and of any likely significant environmental effects, both beneficial and adverse, which are new or different to those reported in the High Speed Two (HS2) Phase One Environmental Statement (ES) submitted to Parliament in November 2013 in support of the hybrid Bill ('the Bill') for Phase One of HS2 (hereafter referred to as 'the main ES') and, where relevant, the AP ES submitted in September 2014 (hereafter referred to as 'the AP1 ES');
- Volume 1: introduction to the SES and the AP2 ES. This introduces the supplementary environmental information and design changes included within the SES and amendments which have resulted in the need to amend the Bill within the AP2 ES. It also explains any changes to the scope, methodology, assumptions and limitations required for the environmental impact assessment;
- Volume 2: community forum area (CFA) reports and map books. These describe the supplementary environmental information and design changes included within the SES (Part 1), amendments within the AP2 ES (Part 2) and report any new or different likely significant environmental effects arising from these changes in each CFA compared to those reported in the main ES and, where relevant, the AP1 ES. The main local alternatives that have been considered are described, where relevant;
- Volume 3: route-wide effects. This reports new or different likely significant route-wide effects arising from the supplementary environmental information and design changes included within the SES (Part 1) and amendments within the AP2 ES (Part 2) compared to those reported in the main ES and, where relevant, the AP1 ES;
- Volume 4: off-route effects. This reports new or different likely significant off-route effects arising from the amendments within the AP2 ES compared to those reported in the main ES and, where relevant, the AP1 ES;
- Volume 5: appendices and map books. This contains supporting environmental information and associated maps; and

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- glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES and AP2 ES compared to those included in the main ES and AP1 ES.

# Structure of this report

This volume of the SES and AP2 ES is divided into CFA reports, which are in turn divided into two parts.

Part 1 provides supplementary environmental information relating to:

- new baseline information with respect to European Protected Species surveys and walk-over surveys for cultural heritage undertaken since the submission of the Bill;
- changes to the design or construction assumptions which do not require changes to the Bill;
- updates to traffic models; and
- corrections to the main ES.

Part 1 includes:

- a description of the changes or updates within the Kilburn (Brent) to Old Oak Common area (CFA4) that have triggered the need for reassessment;
- an assessment of the environmental effects of the changes for relevant environmental topics considering the:
  - scope, assumptions and limitations of the SES assessment;
  - changes of relevance to the assessment;
  - environmental baseline;
  - effects arising during construction;
  - effects arising from operation; and
  - mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of the changes.

Part 2 provides environmental assessment information relating to proposed amendments to the design, which have resulted in the need to alter the powers conferred by the Bill. The following is included where relevant:

- a summary of the proposed amendments within each CFA that have triggered the need for reassessment;
- a description of each amendment;
- an assessment of the environmental effects of each amendment for relevant environmental topics considering the:
  - scope, assumptions and limitations of the AP2 ES assessment;
  - environmental baseline;



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- effects arising during construction;
- effects arising from operation; and
- mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of each proposed amendment.

# 1 Introduction

- 1.1.1 The Bill for High Speed Rail between London and the West Midlands was submitted to Parliament together with the main ES in November 2013. The AP1 ES, which was submitted in September 2014, contained generally minor amendments to the design of the original scheme (i.e. the scheme submitted in November 2013). There were no changes in AP1 relevant to CFA4. The Bill and associated Additional Provisions to the Bill, if enacted by Parliament, will provide the powers to construct, operate and maintain Phase One of HS2.
- 1.1.2 Since the submission of the main ES, a number of changes or updates to environmental information and scheme design or assumptions have occurred, which may lead to new or different significant effects. These effects, depending on the type of change, are reported in the SES (Part 1) or AP2 ES (Part 2) of this document.
- 1.1.3 The SES contains updated environmental baseline information and scheme information relating to changes that have occurred within the current limits and powers of the Bill, and therefore do not require an Additional Provision to the Bill. This includes:
- additional environmental baseline information;
  - changes to the design or construction assumptions which do not require changes to the Bill;
  - an update to the 2012 West London Highway Assignment Model (WeLHAM) traffic model which relates only to construction; and
  - corrections to the main ES.
- 1.1.4 Design changes assessed within the SES include:
- deletion of the HS1-HS2 link; and
  - the removal of the proposal to relocate the Heathrow Express (HEX) depot at the North Pole (East) site. It is now proposed to relocate the depot to Langley in the County of Berkshire and the County of Buckinghamshire. The effects of this provision, which are outside of Kilburn (Brent) to Old Oak Common area (CFA4), are assessed in Volume 4 of the SES and AP2 ES.
- 1.1.5 The changes are described in Part 1 under a series of sub-headings and assessed on a topic by topic basis using the same approach adopted in the main ES.
- 1.1.6 The purpose of the SES is to provide an assessment of any new or different likely significant environmental effects arising from the changes described.
- 1.1.7 The AP2 ES reports the likely significant effects of amendments to the design of the scheme, which require the use of land outside the original limits of the Bill, additional access rights, or other extensions to the powers conferred by the Bill, making it necessary to submit an Additional Provision to the Bill.

1.1.8 The amendments assessed within AP2 ES in CFA4 include:

- provision of new railway facilities on the Great Western Main Line (GWML) at Old Oak Common in the London Borough of Ealing (LBE) and the London Borough of Hammersmith and Fulham (LBHF);
- a sewer diversion;
- a temporary logistics tunnel; and
- other changes to HS2 infrastructure or operations.

1.1.9 The AP2 ES assesses each amendment separately for all relevant topics. The purpose of the AP2 ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments.

1.1.10 The standard measures that will be used to mitigate likely significant adverse environmental effects during construction and operation of the scheme are described in the main ES, Volume 1, Section 9 and the draft Code of Construction Practice (CoCP) submitted in support of the Bill. Implementation of these measures has been assumed in this SES and AP2 ES.

1.1.11 It should be noted that, since submission of the Bill, the scheme design has been revised by SES design changes, amendments described in the AP1 ES (AP1 amendments) and amendments described in the AP2 ES (AP2 amendments). In order to differentiate between the original proposals and subsequent changes, the following terms are used:

- 'the original scheme' - the Bill scheme submitted to Parliament in November 2013, which was assessed in the main ES;
- 'the SES scheme' - the original scheme with the design changes described in the SES; and
- 'the AP2 revised scheme' - the original scheme as amended by the SES scheme and AP2.

# Part 1: Supplementary Environmental Statement

## 2 Summary of changes

### 2.1 New environmental baseline information

#### Cultural heritage

- 2.1.1 Walk-over surveys have been undertaken in this CFA since the production of the main ES (September 2013). Details of survey and desk-based work undertaken in this CFA since production of the main ES (September 2013) are provided in SES and AP2 ES Volume 5: Appendix CH-002-004 and Appendix CH-003-004 and SES and AP2 ES Volume 5 map CH-01-012, where this is relevant to the assessment of a new or different significant effect.
- 2.1.2 Details of supplementary cultural heritage information from these sources that are relevant to the SES assessment are provided in Table 2.

#### Ecology

- 2.1.3 Surveys for bats, along with Phase 1 habitat surveys along newly accessible extents of the railway corridor, have been undertaken in this area since September 2013.
- 2.1.4 Details of all survey work and desk-study information gathered since September 2013 which is relevant to this area is provided in the SES and AP2 ES Volume 5: Appendix EC-001-001 and EC-002-001 and the SES and AP2 ES Volume 5 map EC-05-005.
- 2.1.5 The additional baseline data does not generate any new or different significant effects, and therefore is not reported in Section 3.

### 2.2 Changes to the design or construction assumptions not requiring a change to the Bill

- 2.2.1 Table 1 provides a summary of the changes to the design or construction assumptions not requiring a change to the Bill which will result in new or different significant effects in the Kilburn (Brent) to Old Oak Common community forum area (CFA4). Figure 1 shows the locations.

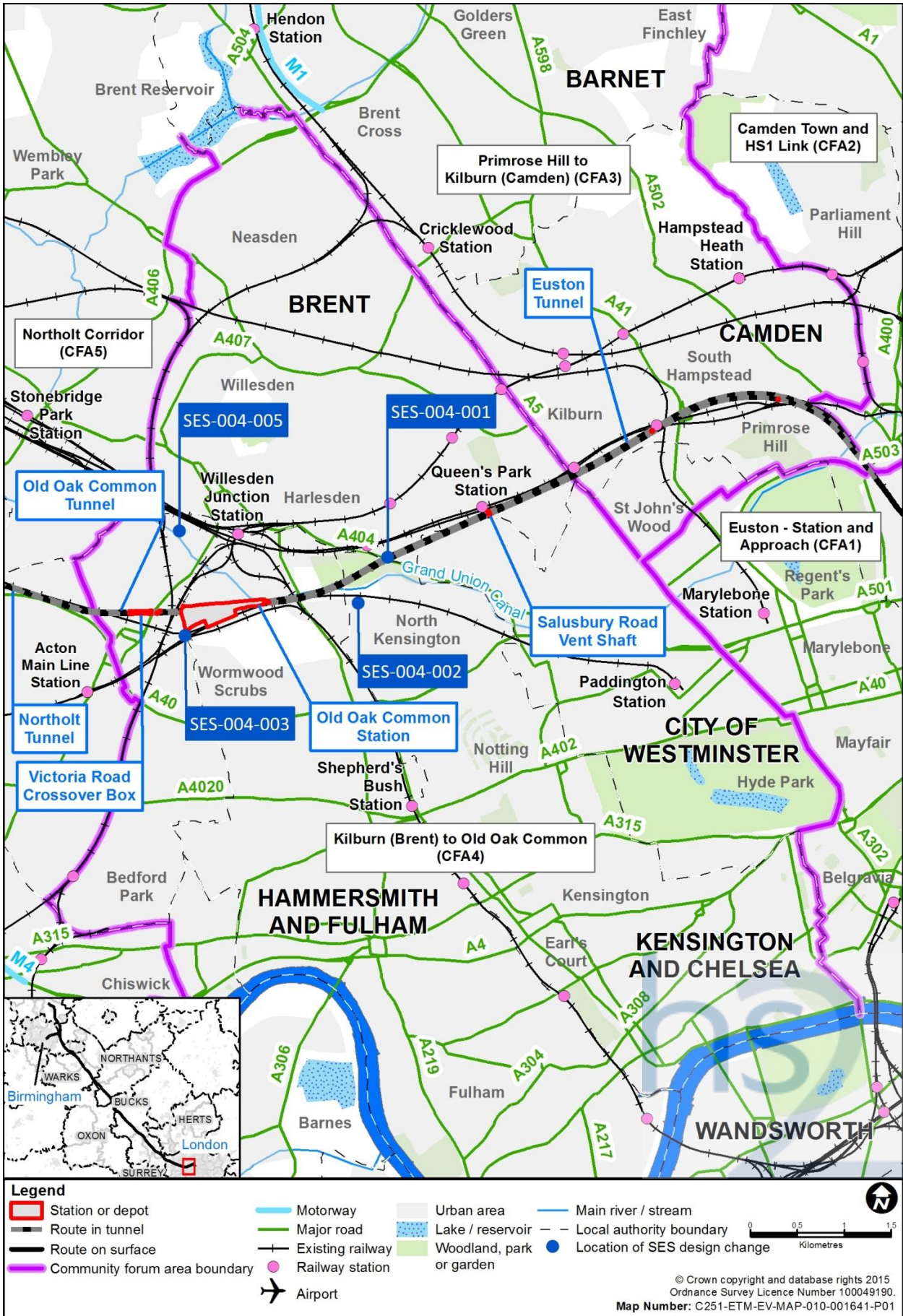
Table 1: Summary of changes to the design or construction assumptions not requiring a change to the Bill in CFA4

Name of design change or construction assumption	Description of the original scheme	Description of the SES scheme
Deletion of the HS1-HS2 link SES-004-001	The Bill provides for a single-bore tunnel linking Old Oak Common station to the HS1-HS2 link portal located north-west of Primrose Hill (in CFA2).	Since the submission of the Bill, the Secretary of State has decided not to pursue the HS1-HS2 link, and has given this commitment to Parliament. The decision to remove the link was made early enough that Parliament has included as part of its instructions to the Select Committee to "remove the link from the Bill".
Removal of proposed Heathrow Express (HEX) depot at North Pole (East) SES-004-002	The Bill provides for the relocation of the HEx depot from its existing location at Old Oak Common to the former Eurostar depot site at North Pole (East).	The North Pole (East) site will not be used for the relocation of the HEx depot. Since submission of the Bill, the need for the reprovision of the HEx depot at North Pole (East) has been reconsidered due to Network Rail operational commitments and requirements. The revised scheme will make provision for a HEx depot at Langley (refer to AP2 ES Volume 4).
Old Oak Common Lane closure mitigation SES-004-003	The Bill provides for the temporary road and footpath closure of Old Oak Common Lane for a period of approximately 12 months during the works to lower the road at Old Oak Common Lane.	Step-free pedestrian access will be maintained along Old Oak Common Lane throughout most of the 12 month period of construction with occasional short-term closures for certain construction works.
Review of construction programme for Heathrow Express (HEX) depot relocation SES-004-004	The Bill provided for the demolition of the existing Heathrow Express (HEX) depot by HS2 in 2017.	Since submission of the Bill, the construction programme has been reviewed and in order to facilitate relocation of the HEx depot, it is proposed to retain the existing HEx depot in situ until late 2019.
The temporary provision of an operational railhead control tower at Euroterminal SES-004-005	The Bill provides for the Euroterminal railhead, located at the proposed Willesden Euroterminal Main Construction Compound to be used for the delivery and movement of materials to and from the worksites during construction.	The provision of temporary operational railhead control towers measuring approximately 100m <sup>2</sup> and 12 metres high at Euroterminal to enable the efficient management of the train operations during construction.
Use of Euro VI Heavy Goods Vehicles (HGV) <sup>1</sup> SES-004-006	The original scheme allowed for any Euro standard engine to be used in HGV transporting excavated material.	In order to mitigate impacts on local air quality in areas where there is action in place to meet EU limit values through the introduction of low emission zones (such as the London Low Emission Zone), HS2 Ltd will require HGV entering these designated zones during construction, for the purposes of transporting excavated material, to be powered by Euro VI (or lower emission) engines.

<sup>1</sup> Euro VI engines are required to have substantially lower emissions of NO<sub>x</sub> and particulate matter than older engines.

# SES and AP2 ES Volume 2 – CFA4, Kilburn (Brent) to Old Oak Common

Figure 1: Locations of design changes not requiring a change to the Bill in CFA4



## Description of changes to the design or construction assumptions

### *Deletion of the HS1-HS2 link (SES-004-001)*

- 2.2.2 The Bill provides for a single-bore tunnel linking Old Oak Common station to the HS1-HS2 Link portal located north-west of Primrose Hill (in CFA2).
- 2.2.3 Since the submission of the Bill, the Secretary of State has decided not to pursue the HS1-HS2 link, and has given this commitment to Parliament. The decision to remove the link was made early enough that Parliament has included as part of its instructions to the Select Committee to 'remove the link from the Bill'.
- 2.2.4 The removal of the HS1-HS2 link tunnel in Kilburn (Brent) to Old Oak Common (CFA4) is not considered to make changes that require reassessment of the effects or proposed mitigation as set out in the main ES with respect to any environmental topics. Any effects of the removal of the HS1-HS2 link outside CFA4 will be reported in a future environmental statement.

### *Removal of proposed Heathrow Express (HEX) depot at North Pole (East) (SES-004-002)*

- 2.2.5 The Bill provides for the relocation of the HEX depot from its existing location at Old Oak Common to the former Eurostar depot site at North Pole (East) (refer to maps CT-05-007-L1, CT-05-008, CT-05-008-L1, CT-06-007-L1, CT-06-008 and CT-06-008-L1 in main ES Volume 2, CFA4 Map Book).
- 2.2.6 Since submission of the Bill, the need for the reprovision of the HEX depot at North Pole (East) has been reconsidered due to Network Rail operational commitments and requirements. The revised scheme will make provision for a HEX depot at Langley (refer to AP2 ES Volume 4, Section 5, AP2-000-001). The land at North Pole (East) will not be removed from the Bill (refer to maps CT-05-008 and CT-06-008 in SES and AP2 ES Volume 2, CFA4 Map Book).
- 2.2.7 The design change results in new or different significant effects for sound, noise and vibration. These are reported in Section 3.

### *Old Oak Common Lane closure mitigation (SES-004-003)*

- 2.2.8 The Bill provides for the temporary road and footpath closure of Old Oak Common Lane for a period of approximately one year during the road and railway bridges works at Old Oak Common Lane (refer to maps CT-05-009a and CT-06-009a in main ES Volume 2, CFA4 Map Book).
- 2.2.9 Since the submission of the Bill, this closure has been reviewed. Step-free pedestrian access along the whole length of Old Oak Common Lane is to be maintained throughout most of the construction period, with occasional short-term closures for certain construction works (refer to map CT-05-009a in SES and AP2 ES Volume 2, CFA4 Map Book).
- 2.2.10 The design change results in new or different significant effects for: community; and traffic and transport; these are reported in Section 3.

*Review of Construction Programme for Heathrow Express (HEX) depot relocation (SES-004-004)*

- 2.2.11 The main ES assumed that the relocation of the existing HEX depot at Old Oak Common would enable possession of the existing site by HS2 in 2017. Since submission of the Bill, the construction programme has been reviewed and in order to facilitate the relocation of the HEX depot, it is proposed to retain the existing HEX depot in situ until late 2019, prior to relocation to an alternative site (refer to SES and AP2 ES Volume 4, Off-Route Effects).
- 2.2.12 As a consequence of this amendment, it is no longer feasible to provide an off highway link along the former Acton to Northolt line (ANL) railway line, between Old Oak Common main compound and the Victoria Road tunnel drive main compound during the excavation phase of the Old Oak Common station box. Consequently, construction traffic including heavy goods vehicles (HGV) transporting excavated material from the station box will access the Atlas Road and Euroterminal satellite compounds via Old Oak Common Lane. The material will then be exported out of London by rail.
- 2.2.13 The design change results in new or different significant effects for: air quality; sound, noise and vibration; and traffic and transport. These are reported in Section 3.

*The temporary provision of operational railhead control towers at Euroterminal (SES-004-005)*

- 2.2.14 The Bill provides for the Euroterminal railhead, located at the proposed Willesden Euroterminal main construction compound within CFA<sub>4</sub>, to be used for the delivery and movement of materials to and from the compounds during construction (refer to map CT-05-009a in the main ES Volume 2, CFA<sub>4</sub> Map Book).
- 2.2.15 Since submission of the Bill, it has been determined that a temporary operational railhead control tower is required, at the railhead within the Willesden Euroterminal main construction compound within CFA<sub>4</sub>, to manage train operations throughout the construction period. The railhead control tower requires an area of approximately 100m<sup>2</sup> and will be approximately 12m high.
- 2.2.16 The provision of the railhead control tower in CFA<sub>4</sub> is not considered to make changes that require reassessment of the effects or proposed mitigation as set out in the main ES with respect to any environmental topics.

*Use of Euro VI Heavy Goods Vehicles (SES-004-006)*

- 2.2.17 The original scheme allowed for any Euro standard engine to be used in HGV transporting excavated material.
- 2.2.18 In order to mitigate impacts on local air quality, in areas where there is action in place to meet EU limit values through the introduction of low emission zones (such as the London Low Emission Zone), HS2 Ltd will require HGV entering these designated zones during construction, for the purposes of transporting excavated material, to be powered by Euro VI (or lower emission) engines.
- 2.2.19 The SES scheme in this CFA is assessed on the basis of the HS2 policy regarding use of relevant HGV powered by Euro VI (or lower emission) engines.



2.2.20 The change in construction assumption results in new or different significant effects for air quality and this is reported in Section 3.

## 2.3 Update to traffic model

2.3.1 The assessment of the traffic effects of the SES scheme changes within the Kilburn (Brent) to Old Oak Common area (CFA4) and the South Ruislip to Ickenham area (CFA6) require updated traffic modelling. The highway traffic model base used for the main ES was the WeLHAM developed by Transport for London (TfL). However, since 2013 there have been major revisions to the WeLHAM model by TfL and HS2 Ltd to provide an improved forecasting capability. This revised model has been used to provide an updated baseline and in the assessment of the SES scheme changes in CFA4, CFA5 and CFA6.

2.3.2 The results of this assessment of the SES scheme for this CFA are reported where they result in new or different significant effects.

2.3.3 The results from the revised model have also been used in the assessment of any consequential effects on the traffic related topics including air quality, community, sound noise and vibration and socio-economics.

## 2.4 Corrections to the main ES

2.4.1 Since submission of the Bill, the need for corrections in the contents of the main ES has been identified. There are instances, as shown in Table 2, where there has been a need to correct the Volume 2 CFA report for CFA4 because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to significant effects has been identified. The table gives the location of the correction in the main ES, the reason for the correction, replicates the text from the main ES, where applicable provides revised text, and identifies whether the correction changes a significant effect reported in the main ES. Where relevant, this correction has been taken into account in the technical assessments contained within Section 3 of this SES.

Table 2: Summary of corrections to the main ES in CFA4

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
Cultural heritage Paragraph 6.3.5, Volume 2, CFA4	Further heritage surveys in the area affected by the Old Oak Common bridge works revealed the location of a non-designated World War 2 pillbox.	Bullet list referencing cultural heritage assets	Bullet list as it is in main ES with the following bullet added:  <ul style="list-style-type: none"> <li>the Second World War pillbox (KIL135).</li> </ul>	An additional significant effect is reported.  The Second World War pillbox (asset reference KIL135) is scheduled for demolition. This will constitute a high adverse impact and moderate adverse significant effect.  No additional mitigation is proposed.

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
Air quality  Traffic inputs used in these assessments, Volume 5: TR-001-000, Annex D, Table 11, of the main ES	The original method to derive Annual Average Daily Traffic (AADT) from peak hour traffic flows used in the air quality assessment was incorrect in this CFA: the HS2 construction HGV flows were overstated.	Section 4.4	The change in the assessment is reported in Section 3.1.	Yes.  The adverse effects reduce in magnitude. The change to significant effects derives from the correction, as well as the following factors: traffic flow changes due to the updated WeLHAM model; flow changes due to the review and rescheduling of construction traffic (SES-004-004); and emissions reductions due to the use of Euro VI HGVs (SES-004-006) for transporting excavated material.

## 2.5 Topics included in the SES assessment

- 2.5.1 The changes described above in Sections 2.1 to 2.4 result in new or different significant effects in respect of; air quality; community; sound, noise and vibration; and traffic and transport.

## 3 Assessment of changes

### 3.1 Air quality

#### Introduction

- 3.1.1 This section of the report describes the environmental baseline in relation to air quality that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme.

#### Scope, assumptions and limitations

- 3.1.2 The assessment scope, key assumptions and limitations for air quality are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES as amended by the SMR Addendum 2 (SES and AP2 ES Volume 5: Appendix CT-001 -000/3).
- 3.1.3 In order to help mitigate impacts on local air quality, in areas where there is action in place to meet EU limit values through the introduction of low emission zones (such as the London Low Emission Zone), HS2 Ltd will require HGVs transporting excavated material and entering these designated zones during construction to be powered by Euro VI (or lower emission) engines.

#### Changes of relevance to this assessment

- 3.1.4 The following changes are relevant to this assessment:
- the update of the WeLHAM model;
  - update of the traffic flows following correction to the method to convert from peak hour flows to AADT for construction traffic;
  - programme changes associated with the relocation of the HEx depot (SES-004-004); and
  - the use of Euro VI HGVs for the movement of excavated materials in the London Low Emission Zone (SES-004-006).
- 3.1.5 The update of the WeLHAM model has resulted in an update both to construction traffic flows and to the future baseline traffic flows, from which the future baseline air quality is predicted. The assessment of air quality impacts from construction traffic depends on both the predictions for the construction scenario and the future baseline case.
- 3.1.6 The HS2 HGV construction traffic flows used in the air quality assessment were overstated for the main ES. This, in turn, had the effect of overstating air quality impacts and the input data have since been revised.

## Environmental baseline

### *Existing baseline*

- 3.1.7 The baseline air quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 4 and Volume 5: Appendix AQ-001-004). Details of the assessed receptors are provided within the SES and AP2 ES Volume 5: Appendix AQ-001-004 and SES and AP2 ES Volume 5 map series AQ-01.
- 3.1.8 In comparison with the main ES, some additional roads had traffic changes which met the assessment criteria. Additional receptors have been identified for assessment alongside the following roads:
- Wulfstan Street;
  - Old Oak Common Lane, at the junction with Wells House Road;
  - A40 Westway/ Western Avenue, at the junction of the Old Oak Common Lane; and
  - along the A40 Western Avenue in the area of Templemead Close.

### *Future baseline*

#### **Construction (2017)**

- 3.1.9 Future background pollutant concentrations have been sourced from the Department for Environment, Food and Rural Affairs (Defra) background maps for 2017. These maps predict that NO<sub>2</sub> and PM<sup>10</sup> concentrations in 2017 will be lower than in the 2012 baseline.
- 3.1.10 The future baseline air quality conditions for 2017 have been updated to reflect updates in the Defra maps and changes in the WeLHAM traffic model.

## **Effects arising during construction**

### *Avoidance and mitigation measures*

- 3.1.11 The use of HGVs powered by Euro VI (or lower emission) engines during construction, for the purposes of transporting excavated material, will reduce emissions of NO<sub>x</sub>, PM<sub>10</sub> and PM<sub>2.5</sub> relative to that assumed in the main ES.

### *Assessment of impacts and effects*

#### **Temporary effects**

- 3.1.12 The construction vehicle flows at peak periods and consequential changes to general traffic flows in CFA4 will give rise to new significant effects at receptors alongside the roads identified in paragraph 3.1.8.
- 3.1.13 A substantial adverse impact is predicted at A40 Westway/Western Avenue, at the junction of Old Oak Common Lane.
- 3.1.14 Moderate adverse impacts are predicted at:
- Wulfstan Street;
  - Old Oak Common Lane, at the junction with Wells House Road; and

- along the A40 Western Avenue in the area of Templemead Close.

3.1.15 Impacts on air quality at all other receptors on roads affected by the SES scheme are lower than reported in the main ES as a consequence of the SES changes (including the use of Euro VI vehicles). At receptors where significant effects were identified in the main ES, including receptors on A4000 Wales Farm Road, Victoria Road and Shaftesbury Gardens, the SES changes will remove significant effects by reducing the magnitude of impact from moderate or substantial adverse (significant) in the main ES to slight adverse, and therefore non-significant. However, at one receptor at the southern end of A4000 Old Oak Lane the SES changes will reduce the magnitude of impact from substantial adverse to moderate adverse which remains significant.

3.1.16 The assessment supporting these conclusions can be found in SES and AP2 ES Volume 5, Appendix AQ-001-004.

### **Permanent effects**

3.1.17 The proposed change will not give rise to any new or different significant permanent effects and will not change the level of significance of the effects reported in the main ES.

### *Other mitigation measures*

3.1.18 No additional mitigation measures to those identified in the main ES are required.

### *Cumulative effects*

3.1.19 There are no new or different likely significant cumulative effects for air quality as a result of the SES changes acting in combination, or as a result of any relevant committed development interacting with the SES scheme.

### *Summary of likely residual significant effects*

3.1.20 As a result of the SES changes and the update to the WeLHAM model in Kilburn (Brent) to Old Oak Common (CFA4) there will be new and different residual significant effects, as follows:

- new significant effects at Wulfstan Street, Old Oak Common Lane (at the junction with Wells House Road), along the A40 Western Avenue in the area of Templemead Close and along the A40 Westway/Western Avenue (at the junction of Old Oak Common Lane) due to construction vehicle flows at peak periods and consequential changes to general traffic flows;
- removal of significant effects reported in the main ES at roads, including Victoria Road, A4000 Wales Farm Road and Shaftesbury Gardens; and
- a different significant effect (substantial adverse to moderate adverse impact which remains significant) at the southern end of A4000 Old Oak Lane.

### **Effects from operation**

3.1.21 The assessment of traffic changes has only considered the construction phase. Operational impacts need to be assessed in combination with any impacts arising from the Euston station design review. Therefore, any new or different likely

significant operation effects arising in this CFA will be reported in a future environmental statement.

## 3.2 Community

### Introduction

- 3.2.1 This section of the report provides a description of the environmental baseline in relation to community that is relevant to the assessment. In addition, it identifies any new or different likely significant environmental effects as a result of the changes described in Section 2 compared to the original scheme.

### Scope, assumptions and limitations

- 3.2.2 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### Changes of relevance to this assessment

- 3.2.3 The Old Oak Common Lane Closure Mitigation (SES-004-003) is the only SES change relevant to this assessment as it results in new or different likely significant effects for community.

### Environmental baseline

#### *Existing baseline*

- 3.2.4 The baseline community information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 5).

#### *Future baseline*

##### **Construction (2017)**

- 3.2.5 The future baseline for construction in 2017 remains unchanged from that reported in the main ES.

##### **Operation (2026)**

- 3.2.6 The future baseline for operation in 2026 remains unchanged from that reported in the main ES.

### Effects arising during construction

#### *Avoidance and mitigation measures*

- 3.2.7 There are no additional avoidance or mitigation measures relevant to these changes, in addition to those described in the main ES.

#### *Assessment of impacts and effects*

##### **Temporary effects**

- 3.2.8 The main ES reported that Old Oak Common Lane, south of the junction with Wells House Road will be closed for approximately 12 months. This would affect the residents of Wells House Road who will not be able to access community facilities,

including schools, childcare and shops, situated to the south, via Old Oak Common Lane. The main ES concluded that this would result in a major adverse effect due to the increased isolation experienced by the Wells House Road community.

- 3.2.9 The SES changes will provide for the maintenance of pedestrian access along the whole length of Old Oak Common Lane throughout most of the construction period to reduce the effects that were previously reported, with occasional short term closures for certain construction works. Old Oak Common Lane will be used by construction traffic. Although public vehicular access will remain unavailable, maintaining pedestrian access will reduce the isolation effects – from major adverse, as reported in the main ES, to moderate adverse, which remains significant.

#### **Permanent effects**

- 3.2.10 There are no new or different likely significant permanent effects for community receptors as a result of the proposed design changes and construction assumptions, in comparison with the effects of the original scheme.

#### *Other mitigation measures*

- 3.2.11 The amendment is a mitigation measure and therefore the provision of pedestrian access along Old Oak Common Lane mitigates the effects at this location reported in the main ES.

#### *Cumulative effects*

- 3.2.12 There are no new or different likely significant cumulative effects for community as a result of the SES changes, or as a result of any relevant committed development interacting with the SES scheme.

#### *Summary of likely residual significant effects*

- 3.2.13 The provision of pedestrian access along Old Oak Common Lane for most of the 12 month construction period (SES-004-003) will reduce the effect on the community from major adverse to moderate adverse. This still constitutes a significant effect.

#### **Effects arising from operation**

- 3.2.14 The Old Oak Common Lane closure mitigation does not affect operation and consequently it will not give rise to any new or different residual significant effects.
- 3.2.15 The assessment of traffic changes has only considered the construction phase. Operational impacts need to be assessed in combination with any impacts arising from the Euston station design review. Therefore, any new or different likely significant operation effects arising in this CFA will be reported in a future environmental statement.

### **3.3 Sound, noise and vibration**

#### **Introduction**

- 3.3.1 This section of the report describes the environmental baseline in relation to sound, noise and vibration that is relevant to the assessment. It then identifies any new or

different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme.

- 3.3.2 More detailed information regarding the construction sound, noise and vibration assessment for this amendment is available in the SES and AP2 ES Volume 5: Appendix SV-003-004.

### **Scope, assumptions and limitations**

- 3.3.3 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 3.3.4 Local assumptions and limitations for sound, noise and vibration are set out in the main ES Volume 2, CFA4 report.

### **Changes of relevance to this assessment**

- 3.3.5 The following changes are relevant to this assessment:
- removal of proposed HEx depot at North Pole (East) (SES-004-002);
  - review of construction programme for the HEx depot relocation (SES-004-004); and
  - consequential use of revised WeLHAM model and potential changes to traffic flows.

### **Environmental baseline**

#### *Existing baseline*

- 3.3.6 The baseline traffic information has been updated since the main ES; further information can be found in the Traffic and Transport assessment appendix (refer to SES and AP2 ES Volume 5: Appendix TR-001-000).
- 3.3.7 In other respects, the baseline sound, noise and vibration information for CFA4 will not change as a result of the SES changes. The baseline is described in the main ES (Volume 5: Appendix SV-002-004).

#### *Future baseline*

##### **Construction (2017)**

- 3.3.8 The baseline traffic information for 2021 has been updated since the main ES to reflect changes in the WeLHAM traffic model. In all other respects, the future baseline for construction in 2017 remains unchanged from that reported in the main ES (Volume 2, CFA4, Section 11).

##### **Operation (2026)**

- 3.3.9 The future baseline for operation in 2026 remains unchanged from that reported in the main ES (Volume 2, CFA4, Section 11).



## Effects arising during construction

### *Avoidance and mitigation measures*

- 3.3.10 The avoidance and mitigation measures are presented in the main ES (Volume 2, CFA4, Section 11).

### *Assessment of impacts and effects*

#### **Residential receptors: construction noise effects - individual dwellings**

- 3.3.11 Taking account of the avoidance and mitigation measures and SES design changes, two buildings (approximately 25 dwellings) on Midland Terrace are forecast to experience night-time noise levels higher than the noise insulation trigger levels, as defined in the draft CoCP that were not identified in the main ES. For daytime construction the trigger level is 75dB measured outdoors, or the existing ambient noise level if it is already above the 75dB level. The equivalent night-time trigger level is 55dB.
- 3.3.12 The mitigation measures, including noise insulation, will reduce noise inside all dwellings such that it does not reach a level where it will significantly affect residents.

#### **Residential receptors: construction noise effects - communities**

- 3.3.13 The proposed changes including the review of the construction programme for the HEx depot relocation (SES-004-004) will give rise to different (in the sense that fewer people will be affected) direct adverse effects on residential communities and shared open areas, but this will remain significant when assessed on a community basis. This different significant effect arises because works associated with the Victoria Road widening occur later in the programme. Accordingly, peak noise generating activities from these works and the demolition works at the Victoria Road compound no longer coincide; hence, the highest total monthly noise level from construction has decreased at some receptors. The main ES identified a significant adverse noise effect in the vicinity of 175 dwellings at Victoria Road/Chase Road roundabout, North Acton (CSV04-Co8). The SES changes will reduce the number of properties that are predicted to be adversely affected at CSV04-Co8 in comparison to the main ES. The different significant adverse noise effect at this location is presented in Table 3.

Table 3: Significant adverse noise effects from construction activities on residential communities that are different to those reported in main ES.

Significant effect number	Type of significant effect	Time of Day	Location	Cause (construction activities)	Assumed duration of impact and details.
CSV04-Co8	Construction noise	Daytime	Approximately 25 dwellings on Victoria Road/Chase Road roundabout, North Acton (AL 700417)	Victoria Road crossover box main compound demolitions and general works. Typical and highest monthly noise levels of 60-65dB and 75dB respectively.	One year and 7 months

### **Residential receptors: noise effects from construction traffic**

- 3.3.14 There are no new or different indirect significant construction noise effects on residential receptors as a result of the SES design changes, in comparison with the main ES.

### **Non-residential receptors**

- 3.3.15 There are no new or different direct or indirect significant construction noise effects on non-residential receptors as a result of the SES design changes, in comparison with the main ES.

### *Cumulative effects*

- 3.3.16 This assessment has considered the potential cumulative construction noise effects of the SES revised scheme and other committed developments. In this area, no committed developments are due to be built at the same time as the SES revised scheme and accordingly, construction noise or vibration from the SES revised scheme is unlikely to result in any significant cumulative noise effects.

### *Summary of likely residual significant effects*

- 3.3.17 Different (reduced) significant residual adverse noise effects from construction activities on residential communities in Victoria Road/ Chase Road roundabout, North Acton are likely as a result of SES changes.

### **Effects arising from operation**

#### *Assessment of impacts and effects*

- 3.3.18 A qualitative assessment of operational sound, noise and vibration as a result of the relocation of the existing HEx depot to North Pole (East), was reported in the main ES within Volume 4, off-route effects. The assessment identified that, taking account of mitigation measures, on a worst-case basis, it is likely that the operation of the depot will give rise to noise impacts (noise increases) and these would have resulted in a likely significant effect. The removal of the proposed HEx depot at North Pole (East) from the original scheme will remove this likely significant operational noise effect from residents in properties in close proximity to the depot.
- 3.3.19 The assessment of traffic changes has only considered the construction phase. Operational impacts need to be assessed in combination with any impacts arising from the Euston station design review. Therefore, any new or different likely significant operation effects arising in Kilburn (Brent) to Old Oak Common (CFA<sub>4</sub>) will be reported in a future environmental statement.

### *Cumulative effects*

- 3.3.20 This assessment has considered the potential cumulative operational noise effects of the SES revised scheme and other committed developments. In this area, no committed developments are due to be built at the same time as the SES revised scheme and accordingly, operational noise or vibration from the SES revised scheme, is unlikely to result in any significant cumulative noise effects.

### *Summary of likely residual significant effects*

- 3.3.21 The likely significant residual operational noise effect identified in the main ES near the HEx depot at North Pole (East) will be removed as a result of the SES amendments. Otherwise, the likely residual significant effects are as described in the main ES.

## **3.4 Traffic and transport**

### **Introduction**

- 3.4.1 This section of the report describes the environmental baseline in relation to traffic and transport that is relevant to the assessment. It then identifies any new or different likely significant environmental effects as a result of the changes introduced in Section 2, compared to the original scheme.

### **Scope, assumptions and limitations**

- 3.4.2 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### **Changes of relevance to this assessment**

- 3.4.3 The following changes are relevant to this assessment:
- Old Oak Common Lane closure mitigation (SES-004-003);
  - programme changes associated with the relocation of the HEx depot (SES-004-004); and
  - consequential use of revised WeLHAM model and potential changes to traffic flows.

### **Environmental baseline**

#### *Existing baseline*

- 3.4.4 The baseline traffic and transport information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 12).
- 3.4.5 Since publication of the main ES, further traffic surveys were undertaken in June 2014 to cover locations not previously surveyed but potentially now affected by the design changes. These roads include:
- Wulfstan Street;
  - Wells House Road; and
  - along the A40 Western Avenue in the area of Templemead Close.
- 3.4.6 The surveys undertaken in 2014 indicate that conditions are similar to those surveyed in 2012 in the local area.

- 3.4.7 In addition, the baseline for highway traffic conditions was provided by the TfL WeLHAM highway model. This has been revised to provide an updated traffic baseline for this assessment.
- 3.4.8 In relation to the baseline highway network, the Atlas Road/ Old Oak Common Lane junction was replaced by a roundabout in spring 2014 by LBE.

### *Future baseline*

#### **Construction**

- 3.4.9 The future baseline for construction is described in the main ES, Volume 2, CFA4, Section 12. In addition, the forecast future baseline schemes and traffic volumes have been incorporated within the updated WeLHAM model for the future construction year of 2021. No other changes to the traffic and transport future baseline are anticipated in the study area.

#### **Operation (2026 and 2041)**

- 3.4.10 The future baseline for operation is described in the main ES, Volume 2, CFA4, Section 12. In addition, the forecast future baseline schemes and traffic volumes have been incorporated within the updated WeLHAM model for the future operational years of 2026 and 2041. No other changes to the traffic and transport future baseline are anticipated in the study area.

### **Effects arising during construction**

#### *Avoidance and mitigation measures*

- 3.4.11 Avoidance and mitigation measures are set out in Volume 2, CFA4, Section 12 of the main ES. In addition, a pedestrian route is retained along Old Oak Common Lane (SES-004-003).
- 3.4.12 The main ES proposed the widening of a signalised junction at the Victoria Road/Atlas Road junction. Since the submission of the main ES, LBE has replaced this junction with a non-signalised roundabout. To mitigate the effects on congestion, in both construction and operation, the original scheme proposal will be implemented, which will replace this roundabout.

### *Assessment of impacts and effects*

#### **Temporary effects**

- 3.4.13 The programme changes associated with the removal of the HEx depot and the consequential non provision of an off highway link along the ANL railway line will result in additional HGV construction vehicle movements on Old Oak Common Lane.
- 3.4.14 Within the overall period of busy movements of five years reported in the main ES (Volume 2, CFA4 Table 17) there will now be slightly over a six-month peak of construction activity resulting in a peak of approximately up to 700 two way daily HGV movements on the north section of Old Oak Common Lane, a period of 22 months with up to 600 two way daily HGV movements on the north section of Old Oak Common Lane, then dropping to 140 two-way daily movements outside this 28-month period.

3.4.15 A major adverse significant effect was reported in relation to traffic severance for non-motorised users on Old Oak Common Lane in the main ES. The SES scheme does not change the conclusion reported in the main ES.

3.4.16 The SES scheme provides pedestrian access on Old Oak Common Lane throughout most of the construction period and there is no longer a requirement for a diversion for pedestrians. The major significant adverse effect reported in the main ES on vulnerable road users due to the 3.5km pedestrian diversion is removed.

#### *Other mitigation measures*

3.4.17 No additional mitigation measures to those identified in the main ES are required.

#### *Cumulative effects*

3.4.18 Cumulative effects are reported in Volume 2, CFA4, Section 12 of the main ES. The above assessment has taken into account these cumulative effects, including planned development by taking account of background traffic growth, as well as traffic and transport impacts of works being undertaken in other areas.

#### *Summary of likely residual significant effects*

3.4.19 The proposed Old Oak Common Lane mitigation will remove the major significant adverse effect in relation to vulnerable road users reported in the main ES.

3.4.20 The significant effects that result from construction of the AP2 revised scheme are shown on Map SES and AP2 ES map TR-03-005 (Volume 5, Traffic and Transport Map Book).

#### **Effects arising from operation**

3.4.21 The assessment of traffic changes has only considered the construction phase. Operational impacts need to be assessed in combination with any impacts arising from the Euston station design review. Therefore, any new or different likely significant operation effects arising in this CFA will be reported in a future environmental statement.

# Part 2: Additional Provision 2 Environmental Statement

## 4 Summary of amendments

- 4.1.1 Table 4 provides a summary of the amendments in the Kilburn (Brent) to Old Oak Common CFA (CFA4) and Figure 2 shows the locations.
- 4.1.2 An assessment of the likely significant environmental effects associated with the disposal of construction, demolition, excavation, worker accommodation site and operational waste has been undertaken for the SES scheme and AP2 revised scheme as a whole. See Volume 3, Section 19 of the SES and AP2 ES for further information.
- 4.1.3 Amendments in this CFA result in significant changes to waste arisings, which are reported in Volume 5, Appendix WM-001-000 of the SES and AP2 ES.
- 4.1.4 An assessment of the likely significant environmental effects associated with the disposal of construction, demolition, excavation, worker accommodation site and operational waste has been undertaken for the SES scheme and AP2 revised scheme as a whole. See Volume 3, Section 20 of the SES and AP2 ES for further information.

Table 4: Summary of amendments in CFA4

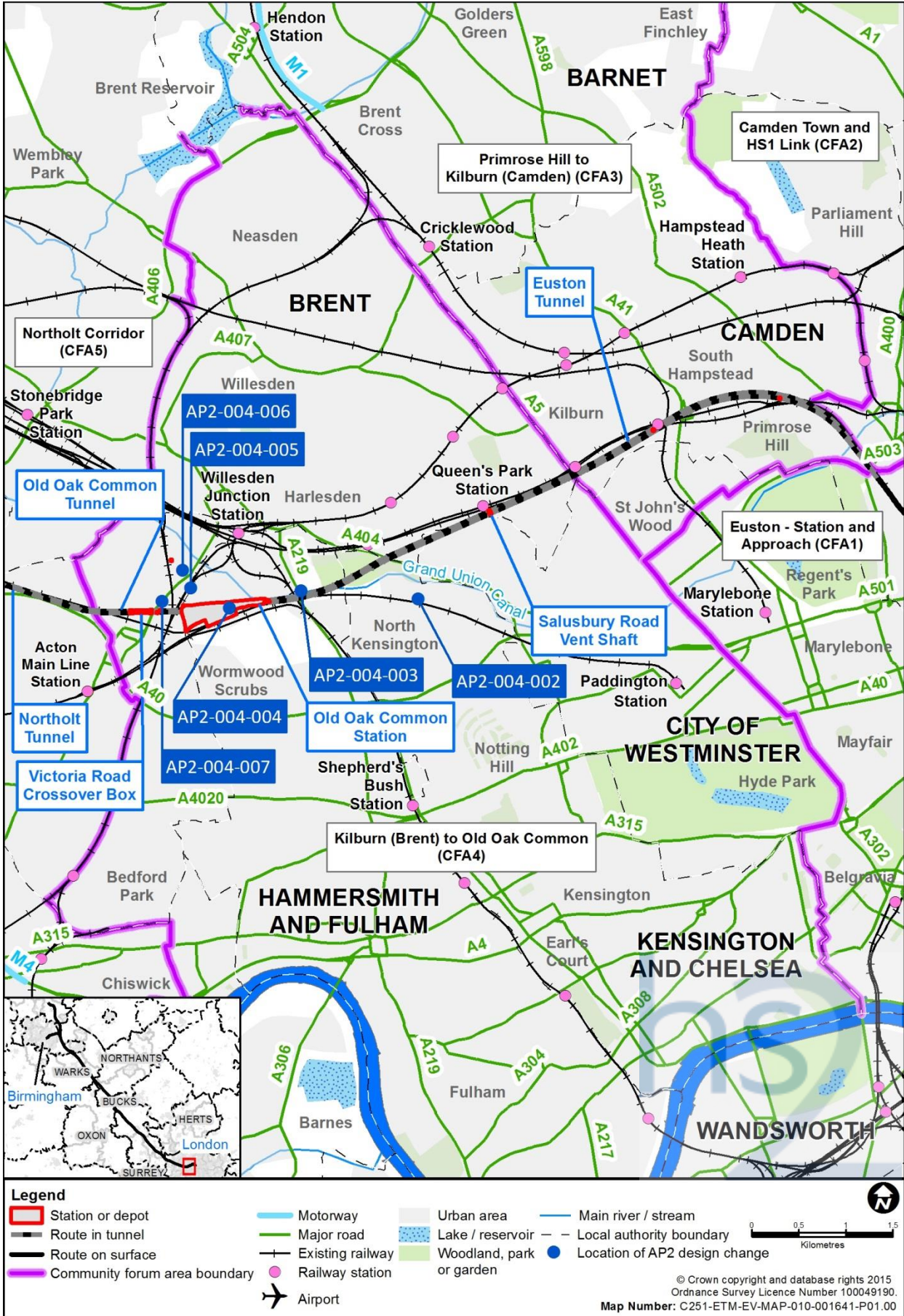
Name of amendment	Description of the original scheme	Description of the AP2 revised scheme
Provision of access to the GWML via a private road in Kensal Green AP2-004-002	Access to the GWML is currently planned from a short access road that is connected to the public highway via a private access road to Canal Way.	Additional powers will be required to use this private road. This amendment to Bill powers relates to access rights only and use of Canal Way will remain as described in the main ES.
Additional land for the Scrubs Lane sewer diversion AP2-004-003	Permanent diversion of a Thames Water sewer to the east of Scrubs Lane Bridge. The diversion requires the demolition of a number of tanks to the south of the GWML.	Additional land is permanently required on the north side of the GWML to enable the sewer to be diverted to the east of Scrubs Lane without demolishing the tanks located on the south side of the GWML. Works on the south side of the GWML will be within the limits set out in the Bill (see Part 1 of this CFA report).
Grade separated junction to provide three turnback sidings for the Crossrail service and passive provision for a West Coast Main Line (WCML) Crossrail Link AP2-004-004	Permanent provision for two turnback sidings for Crossrail services on GWML at Old Oak Common Station.	Provision of infrastructure to enable up to 12 trains per hour to be turned back at Old Oak Common. This requires connections to GWML to the west of Old Oak Common Station, including three turnback sidings south of Wells House Road and a new flyover on the GWML up-relief line.
Atlas Road to Old Oak Common Box Temporary Logistics Tunnel AP2-004-005	The main ES describes the Euston tunnel excavated material removal route as being through the Station and the Old Oak Common tunnel and then via the Northolt Tunnel East conveyor to the railhead at Willesden Eurotunnel main compound. The tunnel lining segments are currently planned to be precast at Atlas Road and then transported by road to the Victoria Road tunnel drive main compound for supply into the tunnel via the temporary shafts.	Additional land is required to build a 920m long tunnel from the Atlas Road Satellite Construction Compound, via a shaft, to the east end of the Old Oak Common HS2 station box. The tunnel will enable removal of excavated material by conveyor belt from the Euston tunnel directly to the Willesden Euroterminal Main Construction Compound and the Atlas Road Satellite Compound, and segment delivery in the opposite direction.
Alteration of land requirements at Atlas Road to maintain operation of bus depots AP2-004-006	Temporary provision of the Atlas Road Satellite Compound. The compound is located on land that is currently occupied by the Tower Transit and London United bus depots.	Amended temporary land requirements for the Atlas Road Satellite Construction Compound to facilitate continued operation of the London United and Tower Transit bus depots. Some additional land will be required and some land included in the Bill will no longer be required. A number of additional demolitions will also be required.

Name of amendment	Description of the original scheme	Description of the AP2 revised scheme
<p>Alteration of land required for the conveyor route running from Atlas Road to Victoria Road Crossover box</p> <p>AP2-004-007</p>	<p>To facilitate operations, the Bill provides for a network of enclosed aerial conveyors to be installed to link the Atlas Road Satellite Construction Compound, the Willesden Euroterminal Main Construction Compound and the Victoria Road Tunnel Drive Main Construction Compound. The conveyors will be approximately 3.3m above ground level at the highest point and will allow material to be transported between compounds and reduce construction traffic on the local highway network.</p>	<p>Rerouting of the conveyor running from Atlas Road to Victoria Road Crossover box away from commercial properties on Chandos Road.</p>



SES and AP2 ES Volume 2 – CFA4, Kilburn (Brent) to Old Oak Common

Figure 2: Locations of amendments in CFA4



## 5 Assessment of amendments

### 5.1 Provision of access to the Great Western Main Line (GMWL) via a private road in Kensal Green (AP2-004-002)

- 5.1.1 The Bill proposes the use of an access route to the GWML that includes a short access road, which is connected to the public highway via Canal Way, south east of Kensal Green Cemetery (refer to maps CT-05-007 and CT-05-007-L1 in main ES Volume 2, CFA4 Map Book).
- 5.1.2 Since submission of the Bill, it has been established that Canal Way is a private road and consequently, additional powers will be required to use this road (refer to maps CT-05-007 and CT-05-007-L1 in Volume 2, CFA4 Map Book of the SES and AP2 ES). This amendment to Bill powers relates to access rights only and Canal Way will remain as described in the main ES.
- 5.1.3 The provision of access to the GWML via a private road in Kensal Green is not considered to make changes that require a reassessment of any of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA Report 5).

### 5.2 Additional land for the Scrubs Lane sewer diversion (AP2-004-003)

- 5.2.1 The Bill provides for the permanent diversion of a Thames Water sewer to the east of Scrubs Lane Bridge (refer to map CT-05-008 in main ES Volume 2, CFA4 Map Book). The diversion required the demolition of a number of tanks to the south of the GWML.
- 5.2.2 Since the submission of the Bill, the permanent acquisition of approximately 460m<sup>2</sup> of land to the north of the GWML is required for the realignment of the proposed sewer diversion to avoid demolishing three existing tanks to the south of the GWML (refer to map CT-05-008 in SES and AP2 ES Volume 2, CFA4 Map Book). The sewer diversion works on the south side will be within existing limits.
- 5.2.3 The additional land for the Scrubs Lane sewer diversion is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES for agriculture, forestry and soils; air quality; community and traffic and transport. However, there were changes where reassessment was considered to be required for: cultural heritage; ecology; land quality; landscape and visual assessment; socio-economics; sound, noise and vibration; and water resources and flood risk assessment.

#### Cultural heritage

##### *Scope, assumptions and limitations*

- 5.2.4 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Environmental baseline*

- 5.2.5 The cultural heritage baseline for the assessment takes into account information collected in support of the main ES, which included walk-over, geophysical survey, remote-sensing data, and from national and local registers. A full list is provided in Volume 2, Section 3.3 of the main ES. In addition, the baseline has been updated with the results of an archaeological and built heritage walk-over survey. These are provided in SES and AP2 ES Volume 5, Appendix CH-002-004.
- 5.2.6 The baseline cultural heritage information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 6). The additional land for the Scrubs Lane sewer diversion is located directly adjacent to the St Mary's Cemetery Conservation Area (asset reference KIL008) and the Grand Union Canal (GUC) Conservation Area (asset reference KIL003), both assets of moderate value. It is also located approximately 300m west of Kilburn Green Cemetery, a grade I Registered Park and Garden (asset reference KIL009), an asset of high value with multiple associated assets of high and moderate value. There are no archaeological assets recorded in the area. The potential survival of archaeological remains is likely to have been impacted by the high level of ground disturbance associated with nineteenth and twentieth century development.

### *Future baseline*

#### **Construction (2017)**

- 5.2.7 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.8 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on cultural heritage.

#### **Operation (2026)**

- 5.2.9 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.10 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.2.11 The additional land for the Scrubs Lane sewer diversion is within the limits of land assessed as having no significant potential to impact buried archaeology or other heritage assets. The diversion will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.2.12 No significant operational effects were reported in the main ES. The additional land for the Scrubs Lane sewer diversion will not give rise to any new or different

significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.13 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.2.14 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.2.15 There are no new or different likely significant cumulative effects for cultural heritage as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Ecology**

### *Scope, assumptions and limitations*

- 5.2.16 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.2.17 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP2 revised scheme.

### *Existing baseline*

- 5.2.18 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including Greenspace Information for Greater London, London Wildlife Trust and London Bat Group. No additional survey information has been collected in this location since September 2013.
- 5.2.19 A summary of the baseline information relevant to the assessment of the amendment is provided below. For those receptors described in the main ES, further details are provided in Volume 2, CFA4, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### Designated sites

- 5.2.20 Designated sites relevant to the assessment (i.e. within or adjacent to the land required for the amendment) include the Local Wildlife Sites listed below:
- London Canals Site of Metropolitan Importance (SMI) – the site supports a number of scarce and uncommon wetland plants on its banks, brickwork and towpaths. The SMI is of county/metropolitan value. The site lies immediately adjacent to the additional land required for the Scrubs Lane sewer diversion (AP2-004-003) to the north of the GWML; and
  - St Mary’s Cemetery Site of Borough Importance II (SBI.II) – a cemetery with a number of mature tree specimens and graves that support higher plants and lichens. The SBI.II is of district/ borough value. The site boundary lies approximately 13 m to the north of the additional land for the Scrubs Lane sewer diversion at its closest point.

### Habitats

- 5.2.21 The additional land required for the Scrubs Lane sewer diversion affects an area of hardstanding, measuring approximately 460m<sup>2</sup>, used to store tyres (replacing a larger area of hardstanding immediately to the north) and a small area of rail side habitat, measuring approximately 180m<sup>2</sup>, comprising bare ground and scrub adjacent to the roadside fence. Collectively, the complexes of mosaic and transition habitats within railway land for the scheme, including scrub, rough grassland and bare ground, are of district/borough value.

### Protected and/or notable species

- 5.2.22 The area of hardstanding used for tyre storage has an isolated patch of vegetation. There are also temporary buildings on the site. In the absence of detailed survey data, it is assumed on a precautionary basis that these buildings or any trees on site could support bats, as well as breeding birds. The small section of rail habitat could support common reptiles and breeding birds.
- 5.2.23 Bird assemblages in this area are likely to be of local/parish value, while any identified reptile populations could be up to district/borough importance. In the absence of detailed survey data, it is not possible to rule out that some trees or buildings affected by this amendment may support maternity bat roosts of common species and/or roosts of rarer species which could be up to county/metropolitan value.

### *Future baseline*

#### **Construction (2017)**

- 5.2.24 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.25 None of the identified developments affect the assessment of the AP2 revised scheme’s likely construction impacts on ecological receptors.

### **Operation (2026)**

- 5.2.26 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.27 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on ecological receptors.

### *Effects arising during construction*

#### **Avoidance and mitigation measures**

- 5.2.28 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

#### **Designated sites**

- 5.2.29 No significant effects on the London Canals SMI or St Mary's Cemetery SBI.II were reported in the main ES.
- 5.2.30 The amendment lies close to the canal at one point, but does not directly affect the London Canals SMI. The proposed amendment will therefore not give rise to new or different significant effects on the designated site and will not change the level of significance of the effects reported in the main ES.
- 5.2.31 For St Mary's Cemetery SBI.II, the amendment will move the area that is permanently affected approximately 13m further away from the designated site boundary.

#### **Habitats**

- 5.2.32 The area affected by the amendment is largely built up land, or areas of hardstanding, with little or no vegetation. The amendment includes a small amount of railside and scrub habitat, along with an isolated patch of vegetation on the hardstanding area. Cumulatively, the loss of mosaic and transition habitats along the railway corridor was assessed to result in a permanent adverse effect that is significant at the district/borough level in the main ES.
- 5.2.33 The additional loss of a small area of rail habitat, measuring approximately 180m<sup>2</sup>, is minimal in this context. The proposed amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### **Protected and/or notable species**

- 5.2.34 The loss of a small number of buildings and trees that could potentially support maternity bat roosts of common species and/or roosts of rare species was assessed in the main ES on a precautionary basis. The potential loss of roost sites was found to have a permanent adverse effect on the conservation status of the local bat assemblage, which would be significant at up to the county/metropolitan level.
- 5.2.35 All other effects on species (such as breeding birds and common reptiles) are relevant at no more than local/parish level, and are not significant.

- 5.2.36 The amendment will result in the loss of a small number of temporary buildings and/or trees that could potentially be used by bats and breeding birds, along with a small area of rail habitat that could be used by breeding birds and reptiles. However, these changes will not generate any new or different significant effects, or change the level of significance of effects reported in the main ES.

### **Cumulative effects**

- 5.2.37 There are no new or different likely cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in the AP2 revised scheme, or any committed developments in this area.

### **Mitigation and residual effects**

#### *Other mitigation measures*

- 5.2.38 No additional mitigation measures to those identified in the main ES and SES are required.

#### *Summary of likely residual effects*

- 5.2.39 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Effects arising from operation*

- 5.2.40 The proposed amendment will not give rise to new or different significant effects on designated sites, habitats or species and will not change the level of significance of the effects reported in the main ES.

### **Land quality**

#### *Scope, assumptions and limitations*

- 5.2.41 The assessment scope, key assumptions and limitations for land quality are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Existing baseline*

- 5.2.42 The baseline land quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 8).

#### *Future baseline*

### **Construction (2017)**

- 5.2.43 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.

- 5.2.44 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on land quality.

## **Operation (2026)**

5.2.45 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.

5.2.46 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on land quality.

### *Effects arising during construction*

5.2.47 No significant construction effects were reported in the main ES with regard to land quality.

5.2.48 The additional land for the Scrubs Lane sewer diversion will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

5.2.49 In the main ES, users of the original scheme (i.e. rail passengers), whilst within trains, are at all routine times, within a controlled environment, and were therefore scoped out of the assessment.

5.2.50 The additional land for the Scrubs Lane sewer diversion will not give rise to a new or different significant operational effect.

### *Mitigation and residual effects*

5.2.51 No avoidance and mitigation measures additional to those reported in the main ES are required.

5.2.52 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

5.2.53 There are no new or different likely significant cumulative effects for land quality as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Landscape and visual assessment**

### *Scope, assumptions and limitations*

5.2.54 The assessment scope, key assumptions and limitations for the landscape and visual assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.



### *Existing baseline*

- 5.2.55 The area of land required for the Scrubs Lane sewer diversion, is located within the Old Oak Common depot and Surrounding Transport Infrastructure Landscape Character Area (LCA), as described in the main ES (Volume 5, CFA 4, LV-001-004). The Kensal Green and St Mary's Cemeteries LCA lies to the north however, the site is separated from St Mary's Cemetery (Metropolitan Open Land, grade II\* in English Heritage's register of parks and gardens of special historical interest and in the St Mary's Conservation Area) by a high brick boundary wall.
- 5.2.56 Views from Scrubs Lane (viewpoint 018.3.001), residential canal boats on the GUC (viewpoint 018.2.002) and the tow path of the GUC (viewpoint 018.3.003) are located in close proximity to the area. They are described in the main ES (Volume 5, CFA4, Appendix LV-001-004).
- 5.2.57 The following viewpoints are also located in close proximity to the area and are described in the main ES (Volume 5, CFA4, LV-001-004):
- view south-west from Mitre Bridge on Scrubs Lane (viewpoint 018.3.001);
  - view south-west from residential canal boats on the GUC (viewpoint 018.2.002); and
  - view south-west from towpath of GUC (viewpoint 018.3.003).

### *Future baseline*

#### **Construction (2017)**

- 5.2.58 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.59 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on landscape and visual receptors.

#### **Operation (2026)**

- 5.2.60 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.61 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on landscape and visual receptors.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.2.62 The Old Oak Common depot and Surrounding Transport Infrastructure LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The landscape is of local value, is in poor condition and tranquillity is low. It is considered to be of low sensitivity to change. The main ES reported a minor adverse effect during construction due to the scale of the construction works in the Old Oak Common depot. The Scrubs Lane sewer diversion works will take place on a

site already in industrial use (a tyre repair and replacement workshop) and consequently they will not introduce uncharacteristic new elements into the LCA. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

- 5.2.63 Effects on the Kensal Green and St Mary's Cemeteries LCA were assessed in the main ES as negligible. The landscape is of regional value, is in good condition and tranquillity is medium. It is considered of high sensitivity to change. The boundary wall of St Mary's Cemetery will limit the impacts of the sewer diversion on the LCA. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.2.64 The main ES reported a negligible effect on the view south-west from Mitre Bridge on Scrubs Lane (viewpoint 018.3.001). The amendment will take place on a site already in industrial use and consequently will not introduce uncharacteristic new elements into the view. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.2.65 View south-west from residential canal boats on the GUC (viewpoint 018.2.002) and view south-west from towpath of GUC (viewpoint 018.3.003) were assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported minor adverse effects due to the scale of the construction works in the Old Oak Common depot. The amendment will take place on a site already in industrial use and consequently will not introduce uncharacteristic new elements into the views. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

#### **Landscape assessment**

- 5.2.66 The land required for construction of the Scrubs Lane sewer diversion will be restored to suitable development use once the works are completed. The main ES reported negligible effects on the Old Oak Common depot and Surrounding Transport Infrastructure LCA and no change to the Kensal Green and St Mary's Cemeteries LCA. The amendment will not give rise to new or different significant effects on either LCA and will not change the level of significance of the effects reported in the main ES.

#### **Visual assessment**

- 5.2.67 The main ES reported negligible effects on viewpoint 018.3.001, viewpoint 018.2.002 and viewpoint 018.3.003. The land required for construction of the Scrubs Lane sewer diversion will be restored to suitable development use once the works are completed and consequently, the amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.68 The proposed Scrubs Lane sewer diversion will not give rise to a new or different residual significant effect during operation and will not change the level of significance of the effects reported in the main ES.

### **Socio-economics**

#### *Scope, assumptions and limitations*

- 5.2.69 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Environmental baseline*

- 5.2.70 The baseline socio-economics information for CFA 4 Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA Report 4, Section 10).

#### *Future baseline*

##### **Construction (2017)**

- 5.2.71 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.72 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on socio-economics.

##### **Operation (2026)**

- 5.2.73 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.74 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on socio-economics.

#### *Effects arising during construction*

- 5.2.75 The additional land required for the Scrubs Lane sewer diversion does not result in displacement of business activity. The proposed amendment will therefore not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.2.76 The proposed amendment related to the Scrubs Lane sewer diversion will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.77 No additional mitigation measures to those identified in the main ES and SES are required.

- 5.2.78 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.2.79 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Sound, noise and vibration**

### *Scope, assumptions and limitations*

- 5.2.80 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.2.81 Local assumptions and limitations for sound, noise and vibration are set out in main ES Volume 2, CFA4 Report.

### *Environmental baseline*

- 5.2.82 The baseline sound, noise and vibration information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 11 and Volume 5: Appendix SV-002-004).

### *Future baseline*

#### **Construction (2017)**

- 5.2.83 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.84 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on sound, noise and vibration.

#### **Operation (2026)**

- 5.2.85 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.86 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on sound, noise and vibration.

### *Effects arising during construction*

- 5.2.87 There are no sensitive receptors in close proximity to the works. The works associated with the proposed amendment also do not represent a substantial intensification of the works reported in the main ES.

- 5.2.88 The additional land required for the Scrubs Lane sewer diversion will therefore not give rise to any new or different significant construction effects on comparison with those reported in the main ES.

#### *Effects arising from operation*

- 5.2.89 The additional land required for the Scrubs Lane sewer diversion will not give rise to any new or different significant operational effects as no operational activities are proposed.

#### *Mitigation and residual effects*

- 5.2.90 No avoidance and mitigation measures additional to those reported in the main ES are required.
- 5.2.91 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Cumulative effects*

- 5.2.92 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Water resources and flood risk**

#### *Scope, assumptions and limitations*

- 5.2.93 The assessment scope, key assumptions and limitations for water resources and flood risk assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 - 000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Environmental baseline*

- 5.2.94 The baseline information for surface and groundwater resources in the Kilburn (Brent) to Old Oak Common area is described in the main ES (Volume 2, CFA4, Section 13).
- 5.2.95 The only surface water feature at this site is the GUC (Paddington Branch) (GUC). The Euston tunnel will pass beneath the GUC in tunnel. The proposed sewer diversion is located north of and adjacent to the canal. The GUC is designated as an artificial water body under the Water Framework Directive (WFD), with a current overall status of 'Moderate'.
- 5.2.96 This area of the proposed amendment is underlain by the London Clay Formation, which is classified as Unproductive strata. There are no superficial deposits present on or within 250m of the proposed sewer diversion area.
- 5.2.97 The entire study area is within Flood Zone 1, i.e. there is a low risk of river and tidal flooding, as reported in the main ES, CFA4, Section 13. The additional land required for the Scrubs Lane sewer diversion is located adjacent to the northern bank of the GUC at Mitre Bridge. At this location the canal is retained only on its southern side. There is consequently no residual risk of flooding at this location from a breach of the canal retaining structures. There is an isolated area to the north-west of the additional

land requirement that is shown to be at risk of flooding from surface water on the Environment Agency's updated Flood Map for Surface Water (uFMfSW) during a 1 in 30 annual probability (3.33%) rainfall event. The additional land itself is not shown to be at risk of flooding from surface water.

### *Future baseline*

#### **Construction (2017)**

- 5.2.98 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.2.99 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on water resources and flood risk.

#### **Operation (2026)**

- 5.2.100 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.2.101 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on water resources and flood risk.

### *Effects arising during construction*

- 5.2.102 All construction work will take place in the London Clay Formation and as such there are no groundwater receptors for this amendment. The low permeability nature of the London Clay Formation effectively acts as a barrier to the downward migration of any existing contamination and is assumed to offer protection to the underlying aquifers.
- 5.2.103 The proposed sewer diversion will be located close to the northern bank of the GUC and therefore has the potential to impact on water quality in the GUC. The measures set out in the draft CoCP will minimise any impact on the GUC. Therefore, the impact is assessed to be negligible with neutral effect and is therefore not significant.
- 5.2.104 The additional land for the sewer diversion has been assessed as not being at risk of flooding.
- 5.2.105 Therefore, the proposed sewer diversion will not give rise to new or different significant construction effects for water resources and flood risk, and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.2.106 No significant operational effects were reported in the main ES with regard to water resources and flood risk.
- 5.2.107 The proposed sewer diversion will not give rise to new or different operational effects on water resources and flood risk and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.2.108 The assessment assumes implementation of the draft CoCP. The general approach to mitigation is set out in Volume 1, Section 9 of the main ES.
- 5.2.109 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.2.110 There are no new or different significant cumulative effects for water resources of flood risk assessment as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **5.3 Summary of new or different likely residual significant effects as a result of the amendment**

- 5.3.1 The additional land for the Scrubs Lane sewer diversion does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA4).

## **5.4 Grade separated junction to provide three turnback sidings for the Crossrail service and passive provision for a West Coast Main Line (WCML) Crossrail Link (AP2-004-004)**

- 5.4.1 The Bill provided for two turnback sidings for Crossrail on the GWML, at the Old Oak Common Station GWML platforms.
- 5.4.2 The amendment will provide new permanent infrastructure to enable up to 12 westbound trains per hour, to be turned back on land to the west of Old Oak Common station. This is provided by:
- three permanent turnback sidings from the proposed station at Old Oak Common, terminating to the south of Wells House Road providing areas for trains to turn back; and
  - a flyover on the realigned GWML up-relief line to provide a grade-separation junction (refer to map CT-05-009a and CT-06-009a and visualisation LV-15-001 (SES and AP2 ES Volume 2, CFA4 Map Book)). The flyover would measure approximately 900m long and rise to 18m above Old Oak Common Lane.
- 5.4.3 In addition, the above provides passive provision for a future WCML Crossrail link.
- 5.4.4 The amendment requires land permanently that, in the Bill, was required temporarily for construction and permanently for ecological mitigation. It will also necessitate the relocation of a Network Rail substation and the realignment of the access road, as compared with the main ES.
- 5.4.5 The provision of the grade separated junction to provide three turnback sidings for the Crossrail service and passive provision for a WCML Crossrail Link is not considered to make changes that require a reassessment of the environmental effects or proposed

mitigation as set out in the main ES for agriculture, forestry and soils; and socio-economics and traffic and transport. However, there were changes where reassessment was considered to be required for: air quality; community; cultural heritage; ecology; land quality; landscape and visual assessment; sound, noise and vibration; and water resources and flood risk assessment.

## **Air quality**

### *Scope, assumptions and limitations*

- 5.4.6 The assessment scope, key assumptions and limitations for air quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES as amended by the SMR Addendum 2 (SES and AP2 ES Volume 5: Appendix CT-001 -000/3).

### *Environmental baseline*

- 5.4.7 The baseline air quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 4).
- 5.4.8 Future background pollutant concentrations have been sourced from the Defra background maps for 2017 that predict NO<sub>2</sub> and PM<sub>10</sub> concentrations in 2017 to be lower than in the 2012 baseline.
- 5.4.9 There are no statutory designated sites within this CFA that could potentially be affected by changes in air quality as a result of the amendment.

### *Future baseline*

#### **Construction (2017)**

- 5.4.10 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.11 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on air quality.

#### **Operation (2026)**

- 5.4.12 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.13 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.4.14 The main ES reported no significant effects on air quality during construction as a result of dust emissions. With the implementation of mitigation measures contained within the draft CoCP, the provision of the grade separated junction and turnback sidings will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.



- 5.4.15 The provision of the grade separated junction and turnback sidings is not considered to result in changes in traffic flow on local roads which require further air quality assessment.
- 5.4.16 The supporting assessment for this conclusion is described in SES and AP ES Appendix AQ-001-004.

#### *Effects arising from operation*

- 5.4.17 There will be no direct atmospheric emissions from the operation of trains that will cause an impact on air quality and these have therefore not been assessed. The provision of the grade separated junction and turnback sidings will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.4.18 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the draft CoCP.
- 5.4.19 The assessment of the amendment has assumed that the general measures detailed in Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.4.20 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.4.21 The main ES reported no residual significant effects on air quality during construction and operation. No new residual effects occur as a consequence of the provision of the grade separated junction and turnback sidings.

#### *Cumulative effects*

- 5.4.22 There are no new or different likely significant cumulative effects for air quality as a result of the amendment acting in combination with another amendment in AP<sub>2</sub>, or as a result of any relevant committed development interacting with the AP<sub>2</sub> revised scheme.

### **Community**

#### *Scope, assumptions and limitations*

- 5.4.23 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES

#### *Existing baseline*

- 5.4.24 The baseline community information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA<sub>4</sub>, Section 5).

### *Future baseline*

#### **Construction (2017)**

- 5.4.25 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.26 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on community.

#### **Operation (2026)**

- 5.4.27 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.28 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on community.

### *Effects arising during construction*

- 5.4.29 The provision of the grade separated junction and turnback sidings does not require additional land used for residential or community facilities. The main ES reported that properties on Wells House Road were predicted to experience impacts on the amenity of residents as a result of significant construction noise effects and significant visual effects. The provision of the grade separated junction will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.4.30 The provision of the grade separated junction will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.4.31 No additional avoidance and mitigation measures are required for the amendment during construction in relation to community.
- 5.4.32 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.4.33 There are no new or different likely significant cumulative effects for community as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## Cultural heritage

### *Scope, assumptions and limitations*

- 5.4.34 The assessment scope, key assumptions and limitations for cultural heritage are as set out Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Existing baseline*

- 5.4.35 The cultural heritage baseline for the assessment takes into account information collected for the purposes of the main ES, which included walk-over and information from national and local registers. A full list is provided in Volume 2, Section 3.3 of the main ES. In addition, the baseline has been updated with the results of an archaeological and built heritage walk-over survey.
- 5.4.36 The baseline cultural heritage information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 6) and the SES.
- 5.4.37 The nearest archaeological asset is the location of Acton Well (asset reference KIL092), a natural spring that became a popular resort in the seventeenth and eighteenth century. The potential survival of unrecorded archaeological remains is likely to have been reduced as a result of ground disturbance associated with the construction of the ANL railway line.

### *Future baseline*

#### **Construction (2017)**

- 5.4.38 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.39 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on cultural heritage.

#### **Operation (2026)**

- 5.4.40 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.41 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.4.42 As described in the main ES, the wider construction works have the potential to affect heritage assets during the construction period. However, the archaeological remains associated with Acton Wells (asset reference KIL092) are likely to be discrete and isolated to an area 100m northwest of the land required for the three turnback sidings for the Crossrail service. Therefore, the provision of the grade separated junction will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.4.43 No significant operational effects were reported in the main ES.
- 5.4.44 The provision of the grade separated junction will not give rise to any new or different significant operational effects.

### *Mitigation and residual effects*

- 5.4.45 No avoidance and mitigation measures additional to those reported in the main ES are required.
- 5.4.46 There are no new or different residual construction or operational effects for cultural heritage as a result of the proposed amendment, in comparison with the main ES, and the SES.

### *Cumulative effects*

- 5.4.47 There are no new or different likely residual significant effects for cultural heritage as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Ecology**

### *Scope, assumptions and limitations*

- 5.4.48 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.4.49 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP2 revised scheme.

### *Existing baseline*

- 5.4.50 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, additional Phase 1 habitat survey work undertaken in 2014, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including Greenspace Information for Greater London, London Wildlife Trust and London Bat Group.
- 5.4.51 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 ES Volume 5, Appendix EC-001-001. For those receptors described in the main ES, further details are provided in Volume 2, CFA4, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.4.52 The only designated site relevant to the assessment (i.e. within or adjacent to the land required for the amendment) is the Acton Railsides (SBI.I), wide rail cuttings with woodland, scrub, grassland and tall herb habitats. The SBI is assessed as being of district/borough value. The site lies partly within the land required for this amendment (AP2-004-004).

### **Habitats**

- 5.4.53 The eastern part of the area required for the amendment (to the east of Old Oak Common Lane) comprises rail sidings of ballast and running rails, between the HEx depot to the north and North Pole depot to the south. It also comprises areas of tarmac hardstanding and isolated patches of railside mosaic comprising grassland scrub and stands of trees. These complexes of mosaic and transition habitat are likely to be district/borough value.
- 5.4.54 The western part of the area required for the amendment (to the west of Old Oak Common Lane) lies within the north-eastern extent of Acton Railsides SBI.I, and comprises the ballast and running rails associated with the GWML and London Underground Central Line to the south of Wells House Road. It also includes an area of grassland, scrub and woodland between the Central Line and GWML where two Network Rail electricity substations are located. These habitats are likely to be of up to district/borough value.

### **Protected and/or notable species**

- 5.4.55 The areas affected contain buildings and trees that could support bats and breeding birds, and areas of rail side habitat that could support common reptiles and breeding birds, as described in the main ES.
- 5.4.56 Bird assemblages in this area are likely to be of local/parish value, while any identified reptile populations could be up to district/borough importance. In the absence of detailed survey data, it is not possible to rule out that some trees or buildings may support maternity bat roosts of common species and/or roosts of rarer species associated with the bat assemblage at Old Oak Common railway land. This is identified as being up to county/metropolitan value in the main ES.

### *Future baseline*

#### **Construction (2017)**

- 5.4.57 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.58 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on ecological receptors.

#### **Operation (2026)**

- 5.4.59 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.

- 5.4.60 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on ecological receptors.

### *Effects arising during construction*

#### **Avoidance and mitigation measures**

- 5.4.61 The assessment assumes implementation of the measures set out within the CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

#### **Designated sites**

- 5.4.62 The loss of approximately 9.2 ha of Acton Railsides SBI.I due to a combination of works in the local area was assessed in the main ES. Impacts on the SBI were found to result in a permanent adverse effect on site integrity that is significant at the district/borough level.
- 5.4.63 The proposed amendment will not result in any additional loss of land from the SBI. The amendment will therefore not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### **Habitats**

- 5.4.64 In the main ES, construction works resulting in the loss of scrub and mosaic and transition habitats within Acton Railsides SBI.I were found to result in a permanent adverse effect that is significant at the district/borough level.
- 5.4.65 There will be no additional habitat loss as a result of this amendment because the land has been included in the temporary land required, as assessed in the main ES. The provision of the grade separated junction will therefore not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

#### **Protected and/or notable species**

- 5.4.66 The loss of a small number of buildings and trees that could potentially support maternity bat roosts of common species and/or roosts of rare species was assessed in the main ES on a precautionary basis. The potential loss of roost sites was found to have a permanent adverse effect on the conservation status of the Old Oak Common railway land bat assemblage, which would be significant at up to the county/metropolitan level.
- 5.4.67 There will be no additional impacts on protected species as a result of this amendment. Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance reported in the main ES.

#### **Cumulative effects**

- 5.4.68 There are no new or different likely significant cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## Mitigation and residual effects

### *Other mitigation measures*

- 5.4.69 Due to an increase in the amount of land permanently required in this area, the amendment will result in a reduction from what was reported in the main ES of 0.2ha of the mitigation woodland planting within the Acton Railsides SBI.1 to the south of Wells House Road. However, the area of mitigation described in the main ES was precautionary, so despite the slight reduction in habitat creation as a result of the amendment no additional mitigation measures are required.

### *Summary of likely residual effects*

- 5.4.70 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Effects arising from operation*

- 5.4.71 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

## Land quality

### *Scope, assumptions and limitations*

- 5.4.72 The assessment scope, key assumptions and limitations for land quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Environmental baseline*

- 5.4.73 The baseline land quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 8).
- 5.4.74 In addition, a summary of the baseline conceptual site model (CSM) for areas associated with the additional provision of the AP2 revised scheme is provided in Table 5.

## SES and AP2 ES Volume 2 – CFA4, Kilburn (Brent) to Old Oak Common

Table 5: Summary of baseline CSM for sites which may pose a contaminative risk for the AP2 revised scheme

Area reference <sup>2</sup>	Area name and classification	Main potential impacts	Main baseline risk <sup>3</sup>
AP2-4-401 AP2-4-402	Existing on-site electricity sub-station overlying the London Clay Formation at the proposed location of the WCML flyover	Human uptake through: dermal contact, ingestion or inhalation of soil/dust, volatilised compounds	Moderate / low
Off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind)		Very low	
Off-site migration of wind-blown dust		Low	

### *Future baseline*

#### **Construction (2017)**

5.4.75 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.

5.4.76 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on land quality.

#### **Operation (2026)**

5.4.77 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.

5.4.78 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on land quality.

### *Effects arising during construction*

5.4.79 Table 6 presents the summary of the temporary construction effects. The construction risk assessment takes into account the implementation of the mitigation measures set out within the draft CoCP. The details of these comparisons are presented in SES and AP2 ES Volume 5: Appendix LQ-001-004.

<sup>2</sup> Each area is assigned a unique identification number (see Volume 5: Appendix LQ-001-004).

<sup>3</sup> The moderate or high risks identified reflect the uncertainty in existing baseline information. Whilst there are unlikely to be properties or receptors that experience the reported high or moderate existing baseline risk in the absence of site investigation, a precautionary, worst-case risk is reported in the table.



## SES and AP2 ES Volume 2 – CFA4, Kilburn (Brent) to Old Oak Common

Table 6: Summary of temporary (construction) effects

Area ref	Area name	Main baseline risk	Main construction risk	Construction effect and significance
AP2-4-401 AP2-4-402	Existing on-site electricity sub-station overlying the London Clay Formation at the proposed location of the WCML flyover	<p>Potential impact on human health on-site from contamination by direct contact, ingestion and inhalation of contaminants in soil and soil-derived dust and contaminated waters = Moderate/low.</p> <p>Potential impact on off-site humans to contamination by off-site migration of soil vapours and volatile organic compounds (by diffusion or due to wind = Moderate/low.</p> <p>Potential impact off-site receptors due to migration of wind-blown dust = Low.</p>	<p>Not applicable - receptor not present</p> <p>Very low</p> <p>Low</p>	Negligible (non-significant)

5.4.80 The alteration includes the new flyover for the GWML up-relief line, which is to be constructed through an area previously used as railway land and two electricity sub-station compounds. The flyover structure will be founded in the former sub-station area (which may potentially be contaminated) and will penetrate the upper London Clay Formation. With suitable measures included, such as those in the CoCP, the effects are considered to be not significant.

5.4.81 The alteration of land requirements at the WCML Crossrail Link will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

5.4.82 In the main ES, users of the original scheme (i.e. rail passengers), whilst within trains, are at all routine times, within a controlled environment, and were therefore scoped out of the assessment.

5.4.83 The alteration of land requirements at the WCML Crossrail Link will not give rise to a new or different significant operational effect.

### *Mitigation and residual effects*

5.4.84 It is considered unlikely that additional remediation works will be required over and above the mitigation measures contained as standard within the draft CoCP of the main ES.

5.4.85 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.4.86 There are no new or different likely significant cumulative effects for land quality as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Landscape and visual assessment**

#### *Scope, assumptions and limitations*

- 5.4.87 The assessment scope, key assumptions and limitations for the landscape and visual assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

#### *Existing baseline*

- 5.4.88 The area of land required for the amendment is located within the Old Oak Common depot and Surrounding Transport Infrastructure LCA, as described in the main ES (Volume 5, CFA4, LV-001-004). The Old Oak Common Residential LCA and the Wormwood Scrubs Open Space LCA are adjacent and described in the main ES (Volume 2, CFA4, Section 9).
- 5.4.89 The following viewpoints are located in close proximity to the area and are described in the main ES (Volume 5, CFA4, Appendix LV-001-004):
- viewpoint 017.3.009: view north-west from Wormwood Scrubs open space;
  - viewpoint 019.2.001: view north from Braybrooke Street;
  - viewpoint 019.2.002: views east, west and south from Wells House Road;
  - viewpoint 019.4.003: view north from Wales Farm Road;
  - viewpoint 019.2.004: views north and east from tower blocks and the Holiday Inn on Victoria Road;
  - viewpoint 020.4.001: view south-west along Victoria Road;
  - viewpoint 020.3.002: view west from Victoria Road play area which is closed during construction;
  - viewpoint 020.4.003: view east from Old Oak Common Lane; and
  - viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens.
- 5.4.90 The grade separated junction, to provide three turnback sidings for the Crossrail service and passive provision for a WCML Crossrail Link, will introduce a new viewpoint into the area. In the main ES views east, west and south from Wells House Road were assessed under viewpoint 019.2.002. The construction and operation of the 18m high flyover, one element of the amendment, will be a new feature in the view, but only from properties at the south-eastern corner of Wells House Road;

consequently a new receptor has been identified for this assessment: view south-east from dwellings on the south-eastern corner of Wells House Road (viewpoint 019.2.005).

- 5.4.91 In the view south-east from dwellings on the south-eastern corner of Wells House Road (viewpoint 019.2.005), the Acton to Northolt line, Old Oak Common Lane and the vegetated bank down to vacant railway land are visible over the fences and vegetation of the back gardens of Wells House Road. The mainline railway bridge over Old Oak Common Lane and the vacant railway land bisected by railway tracks can be seen beyond.

### *Future baseline*

#### **Construction (2017)**

- 5.4.92 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.93 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on landscape and visual receptors.

#### **Operation (2026)**

- 5.4.94 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.95 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on landscape and visual receptors.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.4.96 The Old Oak Common Residential LCA was assessed as being affected by the original scheme, and will also be affected by this amendment. The landscape is valued by the local community, is in fair condition and tranquillity is low. Its residential and secluded character means that it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect during construction due to the presence of construction activity and cranes, construction traffic, bridge replacements, road widening and traffic and pedestrian diversions. The amendment will increase the scale of the works, but the change will be relatively inconspicuous in the context of the works already taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.4.97 The Wormwood Scrubs Open Space LCA was assessed as being affected by the original scheme; and will also be affected by this amendment. The landscape is of borough value, is in fair condition and tranquillity is medium. Its designation as Metropolitan Open Land means that it is considered to be of medium sensitivity to change. The main ES reported moderate adverse effects on the Wormwood Scrubs Open Space LCA due to the removal of vegetation and the presence of construction plant and activity. In the LCA, the amendment will increase the scale of the works, but

the change will be relatively inconspicuous in the context of the works already taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.

- 5.4.98 The Old Oak Common depot and Surrounding Transport Infrastructure LCA was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a minor adverse effect due to the extensive construction works taking place in the LCA. The amendment will increase the scale of the works, but the change will be relatively inconspicuous in the context of the works already taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.

### **Visual assessment**

- 5.4.99 Construction of the turnback sidings, flyover and the Network Rail substation will be visible from Old Oak Common Lane, Wells House Road and Wormwood Scrubs due to the increased height of construction works. However, in most views the works will be a relatively small addition to the original scheme reported in the main ES and will be viewed as one of a series of components of the whole scheme, in the middle ground of the views. The view of the flyover from Old Oak Common Lane is illustrated on photomontage LV-01-283 in SES and AP2 ES Volume 2, CFA4 Map Book. The photograph used for the photomontage is taken from immediately below the eastern side of the Wells House Road triangle. While it does not illustrate the exact view from the backs of the houses here, it does give an indication of the appearance of the flyover in the view.
- 5.4.100 Viewpoint 019.2.002: view east, west and south from Wells House Road was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a major adverse significant effect due to the demolition of buildings, the removal of vegetation, the construction of the station, the widening and lowering of Old Oak Common Lane and the replacement of bridges. The amendment will be located within the existing footprint of the original scheme; it will increase the scale of the works taking place in the view, but the works will be seen in the context of the construction activity of the original scheme. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects on these receptors reported in the main ES.
- 5.4.101 Viewpoint 017.3.009: view north-west from Wormwood Scrubs open space was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a moderate adverse significant effect due to the removal of vegetation and the construction works on the station, the lowering of Old Oak Common Lane, the bridge replacements and the alterations to the North Pole depot access road. The amendment will be located within the existing footprint of the original scheme; it will increase the scale of the works taking place in the view, but they will be seen in the context of the construction activity of the original scheme. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects on these receptors reported in the main ES.

- 5.4.102 Viewpoint 019.2.001: views north from Braybrooke Street was assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported a minor adverse effect due to the removal of vegetation and the construction works on the station, the lowering of Old Oak Common Lane, the bridge replacements and the alterations to the North Pole depot access road. The amendment will be located within the existing footprint of the original scheme; it will increase the scale of the works taking place in the view, but they will be seen in the context of the construction activity of the original scheme. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects on these receptors reported in the main ES.
- 5.4.103 Viewpoint 019.2.005: view south-east from dwellings on the south-eastern corner of Wells House Road (new receptor). The construction of the flyover will be highly visible to receptors: the works will take place in close proximity to receptors and the magnitude of change will be high. The high magnitude of change, assessed against the high sensitivity of the receptor will result in a major adverse effect on views. The amendment will give rise to a new major adverse significant effect on this viewpoint.
- 5.4.104 The amendment will not be visible from the following viewpoints:
- viewpoint 019.4.003: view north from Wales Farm Road;
  - viewpoint 019.2.004: view north and east from tower blocks and the Holiday Inn on Victoria Road;
  - viewpoint 020.4.001: view south-west along Victoria Road;
  - viewpoint 020.4.003: view east from Old Oak Common Lane; and
  - viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens.
- 5.4.105 Consequently, the amendment will not give rise to new or different significant effects and will not change the level of significance of the effects on these receptors reported in the main ES on these viewpoints.

### *Effects arising from operation*

#### **Landscape assessment**

- 5.4.106 The Old Oak Common Residential LCA was assessed as being affected by the original scheme, and will also be affected by this amendment. The main ES reported a minor adverse effect in year 1 and year 15 of operation on Old Oak Common Depot LCA due to the loss of trees and open space in Victoria Road. The infrastructure of the turnback sidings, flyover and the Network Rail substation will be new components in the landscape. The flyover will be substantially higher than all other existing structures in the area, but it will be largely inconspicuous in its setting which is characterised by the presence of extensive existing railway infrastructure. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.
- 5.4.107 The Old Oak Common Depot and Surrounding Transport Infrastructure LCA was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a minor beneficial effect in year 1 and year 15 of

operation on Old Oak Common Depot and Surrounding Transport Infrastructure LCA due to the replacement of the existing utilitarian buildings of the railway depot with the proposed Old Oak Common Station, which will be of a higher architectural quality. The infrastructure of the turnback sidings, flyover and the Network Rail substation will be new components in the landscape. The flyover will be substantially higher than all other existing structures in the area; but it, and the other elements of the amendment, will be largely inconspicuous in their setting, which is characterised by the presence of existing and extensive railway infrastructure. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.

### **Visual assessment**

- 5.4.108 Viewpoint 019.2.002: view east, west and south from Wells House Road was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a moderate beneficial significant effect during operation in year 1 and on to years 15 and 60 because the new station building will be of a higher architectural quality than the existing mixture of utilitarian buildings of the depot. The GWML up-relief viaduct and bridge will not be visible or visible in oblique views from most properties in Wells House Road, apart from those at the south-eastern corner (assessed separately below). The sidings and substation will be seen in the context of the existing railway infrastructure in which they will be located and therefore will be seen as new features, but ones largely characteristic of the existing view. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.4.109 Viewpoints 017.3.009: view north-west from Wormwood Scrubs open space and 019.2.001: view north from Braybrooke Street, were assessed as non-significantly affected in the main ES. The flyover will be visible from both viewpoints, but will be seen in the background of the view, over intervening vegetation and the existing railway infrastructure. It will be a new feature, but one which is largely characteristic of the existing view. The other elements of the amendment will not be visible. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.
- 5.4.110 Viewpoint 019.2.005: view south-east from dwellings on the south-eastern corner of Wells House Road (new receptor) will be affected by this amendment. The flyover element of the amendment will be higher than other existing structures in the area and consequently will be highly visible in close views from this viewpoint. The GWML viaduct will be a prominent new feature, crossing the view approximately 50m away from the upper floor windows of the closest properties. Long views from these windows will be partly blocked by the viaduct. The viaduct will become less prominent as it descends towards the south-west, since it will be lower and further from receptors. The magnitude of change will be high. The high magnitude of change assessed against the high sensitivity of the receptor will result in a major adverse effect on views in year 1 of operation. The operational effects will remain unchanged in years 15 and 60 when compared to year 1.

5.4.111 The amendment will not be visible from the following viewpoints:

- viewpoint 019.4.003: view north from Wales Farm Road;
- viewpoint 019.2.004: view north and east from tower blocks and the Holiday Inn on Victoria Road;
- viewpoint 020.4.001: view south-west along Victoria Road;
- viewpoint 020.3.002: view west from Victoria Road play area;
- viewpoint 020.4.003: view east from Old Oak Common Lane; and
- viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens.

5.4.112 Consequently, the amendment will not give rise to new or different significant effects and will not change the level of significance of the effects on these receptors reported in the main ES on these viewpoints.

#### *Mitigation and residual effects*

5.4.113 No additional mitigation measures to those identified in the main ES and SES are considered practicable.

5.4.114 This amendment will give rise to a new residual significant effect on the viewpoint 019.2.005: view south-east from dwellings on the south-eastern corner of Wells House Road during construction and operation. The effect will be major adverse in year 1, which will remain unchanged in years 15 and 60.

#### *Cumulative effects*

5.4.115 There are no new or different likely significant cumulative effects for landscape and visual as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Sound, noise and vibration**

#### *Scope, assumptions and limitations*

5.4.116 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

5.4.117 Local assumptions and limitations for sound noise and vibration are set out in main ES Volume 2, CFA4 Report and in the SES and AP2 ES, Volume 5 Appendix SV-004-004.

#### *Environmental baseline*

5.4.118 The baseline sound environment for the area is described in the main ES (Volume 2 Report CFA4 and Volume 5 Appendix SV-002-004). The baseline sound environments for those assessment locations, identified as a result of this amendment, are identified in SES and AP2 ES Volume 5, Appendix SV-002-004. Baseline sound levels representative of the assessment locations affected by this amendment have been used in both the construction and operational assessments.

- 5.4.119 Additional baseline sound measurements have been completed in CFA 4 to inform the assessment of this amendment. The existing baseline sound environment around the site consists of a mixture of transportation, industrial and commercial sources. The railway lines here include the WCML, GWML, Acton Main Line and the North London Line. In addition, the London Underground Central and Bakerloo lines also run above ground through this area.
- 5.4.120 In much of the Old Oak Common area, the soundscape is dominated by nearby road and rail traffic, with distant road traffic from the A40 audible in some locations. This leads to a large variation in sound level dependent upon location, and daytime sound levels typically range between approximately 55dB when distant and/or screened from these sources and approximately 75dB when nearby. During less busy periods of road and rail traffic flow, natural sound sources are can become apparent.
- 5.4.121 Night-time sound levels in this area are typically 5 to 10dB lower than those during the day; with the greater reduction in the locations furthest or screened from the main transportation sources. At some locations close to railway lines, which are used less frequently during the day but operate freight trains at night, similar sound levels have been measured at night as during the day.
- 5.4.122 At the southern aspect of Wells House Road, in the period between the baseline sound measurements being completed and the commencement of the operation of the turnback sidings it is expected that the Crossrail scheme will come into operation. This will alter the ambient sound environment in the locale of the route. As reported within the Crossrail Environmental Statement, the change in local sound levels due to the introduction of this scheme will be less than 3dB<sup>4</sup>.

### *Future baseline*

#### **Construction (2017)**

- 5.4.123 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.124 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on sound, noise and vibration.

#### **Operation (2026)**

- 5.4.125 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.126 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on sound, noise and vibration.

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<sup>4</sup> "Intensification of train flows along the line will result in a maximum noise change that is less than 3 dB during both the day and at night. This is below the significance criterion, hence no impact". Extract from Crossrail, Technical Report, Assessment of Noise and Vibration Impacts, Volume 5 of 8, Western Route Section, No. 1E0315-W1E00-00001, Page 165.



*Effects arising during construction*

5.4.127 More detailed information regarding the construction sound, noise and vibration assessment for this amendment, is available in the SES and AP2 ES Volume 5: Appendix SV-003-004.

**Residential receptors: direct effects - individual dwellings**

5.4.128 Taking account of the avoidance and mitigation measures as outlined in the main ES (Volume 2, CFA4, Section 11) and the amendment, 17 dwellings on Wells House Road (in addition to approximately 100 dwellings identified in the main ES) facing south are forecast to experience noise levels higher than the noise insulation trigger levels, as defined in the draft CoCP.

5.4.129 The mitigation measures, including noise insulation, will reduce noise inside all dwellings such that it does not reach a level where it will significantly affect residents.

**Residential receptors: direct effects - communities**

5.4.130 With regard to noise outside dwellings, the assessment of temporary effects takes account of construction noise relative to existing sound levels.

5.4.131 The proposed amendment will give rise to different direct adverse effects on residential communities and shared open areas that are considered to be significant on a community basis. These are presented in Table 7.

Table 7: Significant adverse construction noise effects on residential communities that are different to those reported in main ES.

Significant effect number	Type of significant effect	Time of Day	Location	Cause (construction activities)	Assumed duration of impact and details.
CSV04-C07	Construction noise	Daytime	Approximately 100 dwellings on Wells House Road	As described in Table 15 of the main ES, Volume 2, CFA4, with the addition of the GWML up relief viaduct over Old Oak Common Lane. Typical and highest monthly noise levels of 65-80dB and 75-85dB.	Between nine months and up to five years and ten months
		Evening	Approximately 110 dwellings on Wells House Road	As described in Table 15 of the main ES, Volume 2, CFA4, with the addition of the GWML up relief viaduct over Old Oak Common Lane. Typical and highest monthly noise levels of 55-65dB and 60-75dB.	Between eight months and up to three years and three months
		Night-time	Approximately 40 dwellings on Wells House Road	Victoria Road Tunnel Drive Compound works. Typical and highest monthly noise levels of 55dB and 60dB.	Three years and three months to four years and eleven months

5.4.132 The main ES identified a significant effect in the vicinity of approximately 100 dwellings on Wells House Road during the daytime for 15 to 55 months and 40 dwellings during the night-time for 40 to 60 months (CSV04-C07). The amendment

will not increase the number of properties that are predicted to be adversely affected during the daytime or night time at CSVo4-Co7, but it will increase the duration of the daytime impact in comparison to the main ES and SES (see Table 7).

- 5.4.133 The main ES identified a significant effect in the vicinity of approximately 30 dwellings on Wells House Road during the evening for 15 months (CSVo4-Co7). The amendment will increase the number of properties that are predicted to be adversely affected to 110 during the evening at CSVo4-Co7 and increase the duration of the impact in comparison to the main ES and SES (see Table 7).

#### **Residential receptors: indirect effects**

- 5.4.134 The provision of the grade separated junction will not give rise to any new or different significant construction noise effects on residential receptors from those reported in the main ES.

#### **Non-residential receptors**

- 5.4.135 The provision of the grade separated junction will not give rise to any new or different significant direct or indirect construction effects on non-residential receptors and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.4.136 The main ES did not identify any operational noise or vibration effects in CFA 4 as a result of the operation of the route.
- 5.4.137 The predicted operational sound and vibration levels as a result of this amendment are presented in AP2 ES Appendix SV-004-004. This amendment does not result in any new significant operational noise or vibration effects.

#### *Mitigation and residual effects*

- 5.4.138 The avoidance and mitigation measures reduce noise inside all dwellings from the construction activities such that it does not reach a level where it will significantly affect residents.
- 5.4.139 On a reasonable worst-case basis, noise from specific construction activities has been identified as resulting in different residual adverse effects on residential communities and shared open areas in the vicinity of Wells House Road that are considered to be significant on a community basis.
- 5.4.140 The following operational noise mitigation is proposed in addition to the mitigation identified within the main ES (Volume 2, CFA4, Section 11):
- noise barriers in the form of noise fence barriers are proposed to the north of the turnback sidings and the Great Western Relief Viaduct at a height of 3m above rail level, as shown on map CT-06-009a; and
  - measures to control curving noise have been included within the AP2 revised scheme, including top-of-rail friction modifiers, flange lubricators and, if required, check rail lubricators.

- 5.4.141 No new or different operational residual significant effects from those reported in the main ES occur as a consequence of the amendment.

### *Cumulative effects*

- 5.4.142 This assessment has considered the potential cumulative construction noise effects of the AP2 revised scheme and committed developments. In this area, no committed developments are due to be built at the same time as the amendment and accordingly, construction noise or vibration from the AP2 revised scheme is unlikely to result in any significant cumulative noise effects.

## **Water resources and flood risk**

### *Scope, assumptions and limitations*

- 5.4.143 The assessment scope, key assumptions and limitations for water resources and flood risk assessment as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Existing baseline*

- 5.4.144 The baseline information for surface and groundwater resources in the Kilburn (Brent) to Old Oak Common area is described in the main ES (Volume 2, CFA4, Section 13).
- 5.4.145 The only surface water feature at this site is the GUC. The Euston tunnel will pass beneath the GUC in tunnel. The proposed turnback sidings and flyover on the GWML up-relief line are located south of and approximately 150m from the canal. The GUC is designated as an artificial water body under the WFD, with a current overall status of 'Moderate'.
- 5.4.146 The site is underlain by the London Clay Formation which is classified as Unproductive strata. No WFD classification has been given to the London Clay Formation. There are no superficial deposits in the area, although there is made ground across much of the site.
- 5.4.147 The entire study area is within Flood Zone 1, i.e. there is a low risk of river and tidal flooding, as reported in the main ES, CFA Report 4, Section 13.
- 5.4.148 In the vicinity of the amendment there are areas at risk of surface water flooding. The uFMfSW identifies a risk of surface water flooding during a 1 in 30 annual probability (3.33%) rainfall event within the cutting associated with the existing Central Line between North Acton LU station and East Acton LU station and along Old Oak Common Lane. There is shown to be an area at risk of surface water flooding during a 1 in 30 annual probability (3.33%) rainfall event along the GWML.

### *Future baseline*

#### **Construction (2017)**

- 5.4.149 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.4.150 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on water resources and flood risk.

### **Operation (2026)**

- 5.4.151 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.4.152 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on water resources and flood risk.

#### *Effects arising during construction*

- 5.4.153 All work will take place in the London Clay Formation and therefore there is no potential for impact to groundwater features. The low permeability nature of the London Clay Formation effectively acts as a barrier to the downward migration of any existing contamination and is assumed to offer protection to the underlying aquifers.
- 5.4.154 The construction of the turnbacks and flyover on the GWML up-relief line will be located close to the GUC. This construction has the potential to impact on the water flow and quality of the GUC. The potential unmitigated impact is likely to be minor, as it would be measurable but not impact on the WFD status. Application of measures set out in the draft CoCP will minimise impacts on the GUC and remaining impacts are assessed as negligible with neutral effect and therefore not significant.
- 5.4.155 The GWML up-relief viaduct will cross areas at risk of surface water flooding at Old Oak Common Lane and at the Central Line underbridges. The GWML railway realignment will not include an alteration in the vertical alignment. There will be no significant construction works that are expected to impede surface water flood flows as a result of the amendment. As a result, there will not be an increase in flood risk during the construction of the amendment and therefore no significant temporary or permanent effects are predicted.
- 5.4.156 Therefore, the proposed amendment will not give rise to new or different significant construction effects for water resources and flood risk and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.4.157 No significant adverse surface water, groundwater or flood risk effects during operation were identified in the main ES.
- 5.4.158 The provision of the grade separated junction and WCML Crossrail link will not give rise to new or different significant operational effects.

#### *Mitigation and residual effects*

- 5.4.159 The assessment assumes implementation of the draft CoCP. The general approach to mitigation is set out in Volume 1, Section 9 of the main ES.

- 5.4.160 Generic design measures will be implemented to avoid significant adverse effects on the quality and flow characteristics of surface watercourses and groundwater bodies during operation of the AP2 revised scheme. These are described in Volume 1 of the main ES and in the operation and maintenance plan for water resources and flood risk included in Volume 5 Appendix WR-001-000 of the main ES.
- 5.4.161 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.4.162 There are no new or different cumulative significant effects for water resources or flood risk as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **5.5 Summary of new or different likely residual significant effects as a result of the amendment**

- 5.5.1 The proposed amendment to provide turnback sidings for the Crossrail service and passive provision for a WCML Crossrail link will give rise to new and different significant effects with regard to visual impacts and sound, noise and vibration.
- 5.5.2 The amendment will give rise to a new significant residual effect on viewpoint 019.2.005: view south-east from dwellings on the south-eastern corner of Wells House Road. The effect will be major adverse in year 1, which will remain unchanged in years 15 and 60.
- 5.5.3 The amendment will also increase the number of properties along Wells House Road that are predicted to be adversely affected by construction noise from 30 to 110 dwellings during the evening (CSV04-Co7), as well as increase the duration of the impact in comparison to the main ES and SES. The amendment will not increase the number of properties that are predicted to be adversely affected during the daytime or night-time at CSV04-Co7, but it will increase the duration of the impact in comparison to the main ES and SES. The amendment will therefore result in different residual adverse effects on residential communities and shared open areas in the vicinity of Wells House Road that are considered to be significant on a community basis.
- 5.5.4 In respect of other environmental topics, the amendment does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA4).

## **5.6 Atlas Road to Old Oak Common station box temporary logistics tunnel (AP2-004-005)**

- 5.6.1 The Bill did not provide for a logistics tunnel. Excavated material from the Euston tunnel would have been conveyed through the station and the Old Oak Common tunnel and then via the Northolt Tunnel East conveyor to the Euroterminal railhead. The amendment provides for a temporary 920m long tunnel from the eastern end of the proposed Old Oak Common Station Box to the Atlas Road satellite compound.

This will enable excavated material generated during construction of the Euston tunnel to be transported by conveyor directly from the station box to the Atlas Road satellite compound. It will also provide for the delivery of concrete tunnel lining segments by construction train from Atlas Road satellite compound to Old Oak Common Station Box main compound to construct the Euston tunnel.

- 5.6.2 The proposed temporary logistics tunnel will have an external diameter of 6m. It will be at approximately 15m below the ground level and accessed via a temporary 12m diameter shaft in the Atlas Road satellite construction compound. Access to the proposed Old Oak Common Station will be via the side of the proposed station box construction.
- 5.6.3 The proposed temporary logistics tunnel will be constructed using a mechanised shield with precast concrete segmental lining, measuring approximately 500mm. The expected time to construct the temporary tunnel will be 6 months. Over a further 6 weeks, the excavated material conveyor and the construction of the temporary concrete segment railway within the tunnel will be installed. Excavated material from the temporary logistics tunnel will be reused wherever reasonably practicable along the alignment of the AP2 Scheme. Any unused excavated material will be exported from the site through the Willesden Euroterminal main compound by rail.
- 5.6.4 Once the Euston Tunnel has been completed, it is assumed that the proposed temporary logistics tunnel will be decommissioned and backfilled, using foamed concrete. This is expected to take approximately 6 months.
- 5.6.5 The additional land for the logistics tunnel is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES for agriculture, forestry and soils, community; cultural heritage; ecology, landscape and visual assessment; socio-economics; and traffic and transport. However, there were changes where reassessment was considered to be required for air quality; land quality; sound, noise and vibration; and water resources and flood risk assessment.

## **Air quality**

### *Scope, assumptions and limitations*

- 5.6.6 The assessment scope, key assumptions and limitations for air quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES as amended by the SMR Addendum 2 (SES and AP2 ES Volume 5: Appendix CT-001 -000/3).

### *Existing baseline*

- 5.6.7 The baseline air quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 4).
- 5.6.8 Future background pollutant concentrations have been sourced from the Defra background maps for 2017 that predict NO<sub>2</sub> and PM<sub>10</sub> concentrations in 2017 to be lower than in the 2012 baseline.
- 5.6.9 There are no statutory designated sites within this CFA that could potentially be affected by changes in air quality as a result of the amendment.

### *Future baseline*

#### **Construction (2017)**

- 5.6.10 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.6.11 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on air quality.

#### **Operation (2026)**

- 5.6.12 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.6.13 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.6.14 The main ES reported no significant effects from dust emissions on air quality during construction. The temporary logistics tunnel will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.
- 5.6.15 The supporting assessment for this conclusion is described in SES and AP ES Appendix AQ-001-004.

### *Effects arising from operation*

- 5.6.16 The temporary logistics tunnel will only be used in the construction phase and will be decommissioned before operation. Therefore there will be no new or different significant effects arising from operation.

### *Mitigation and residual effects*

- 5.6.17 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the draft CoCP.
- 5.6.18 The assessment of the amendment has assumed that the general measures detailed Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.6.19 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.6.20 The main ES reported no residual significant effects on air quality during construction and operation. No new residual effects occur as a consequence of the temporary logistics tunnel.

### *Cumulative effects*

- 5.6.21 There are no new or different likely significant cumulative effects for air quality as a result of the amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Land quality**

#### *Scope, assumptions and limitations*

- 5.6.22 The assessment scope, key assumptions and limitations for land quality are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Existing baseline*

- 5.6.23 The baseline land quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 8).

#### *Future baseline*

##### **Construction (2017)**

- 5.6.24 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.6.25 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on land quality.

##### **Operation (2026)**

- 5.6.26 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.6.27 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on land quality.

#### *Effects arising during construction*

- 5.6.28 No significant construction effects were reported in the main ES with regard to land quality.
- 5.6.29 The logistics tunnel will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

#### *Effects from operation*

- 5.6.30 The temporary logistics tunnel will only be used in the construction phase and will be decommissioned before operation. Therefore there will be no new or different significant effects arising from operation.



### *Mitigation and residual effects*

- 5.6.31 It is considered unlikely that additional remediation works will be required over and above the mitigation measures contained as standard within the draft CoCP of the main ES.
- 5.6.32 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.6.33 There are no new or different likely significant cumulative effects for land quality as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Sound, noise and vibration**

### *Scope, assumptions and limitations*

- 5.6.34 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.6.35 Local assumptions and limitations for sound noise and vibration are set out in main ES Volume 2 CFA4 Report.

### *Existing baseline*

- 5.6.36 The baseline sound, noise and vibration information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 11 and Volume 5: Appendix SV-002-004).

### *Future baseline*

#### **Construction (2017)**

- 5.6.37 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.6.38 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on sound, noise and vibration.

#### **Operation (2026)**

- 5.6.39 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.6.40 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on sound, noise and vibration.

### *Effects arising during construction*

- 5.6.41 The works associated with the proposed amendment do not represent a substantial intensification of the works reported in the main ES. The predicted noise levels from construction works associated with the amendment do not lead to adverse noise effects on residential or non-residential receptors.
- 5.6.42 The logistics tunnel will therefore not give rise to any new or different significant construction effects compared with those reported in the main ES.

### *Effects arising from operation*

- 5.6.43 The temporary logistics tunnel will only be used in the construction phase and will be decommissioned before operation. Therefore there will be no new or different significant effects arising from operation.

### *Mitigation and residual effects*

- 5.6.44 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.6.45 No new residual effects occur as a consequence of the temporary logistics tunnel. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.6.46 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Water resources and flood risk assessment**

### *Scope, assumptions and limitations*

- 5.6.47 The assessment scope, key assumptions and limitations for the water resources and flood risk assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.6.48 The new tunnel will be constructed approximately 15m below ground level, and will be constructed entirely within the London Clay Formation. The tunnel will only be required during the construction phase and will be decommissioned prior to operation. Decommissioning impacts are considered under the construction phase.

### *Existing baseline*

- 5.6.49 The baseline information for surface and groundwater resources in the Kilburn (Brent) to Old Oak Common area is described in the main ES (Volume 2, CFA4, Section 13).
- 5.6.50 The site is underlain by the London Clay Formation that is classified as unproductive strata. No WFD classification has been given to the London Clay Formation. There are no superficial deposits in the area, although there is made ground across much of the site.

- 5.6.51 The entire study area is within Flood Zone 1, i.e. there is a low risk of river and tidal flooding, as reported in the main ES, CFA Report 4, Section 13. Flood risk effects from river flooding have therefore not been considered further within this assessment.
- 5.6.52 In the vicinity of the temporary shaft for the amendment, to the north-west of the existing warehouse superstore, there is an isolated area at risk of shallow (<0.1m) surface water flooding. The south-eastern extent of the Atlas Road to Old Oak Common box temporary logistics tunnel is located within the excavation for the proposed Old Oak Common Station. There are isolated areas at risk of shallow surface water flooding in the vicinity of the proposed Old Oak Common Station. In addition, there remains a residual risk of flooding due to a breach of the retaining structure of the GUC at the proposed Old Oak Common Station.
- 5.6.53 Further details on the risk of flooding in this location are presented in the CFA 4 Flood Risk Assessment (Volume 5: Appendix WR-003-004) of the main ES.

### *Future baseline*

#### **Construction (2017)**

- 5.6.54 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.6.55 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on water resources and flood risk.

#### **Operation (2026)**

- 5.6.56 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.6.57 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on water resources and flood risk.

### *Effects arising during construction*

- 5.6.58 The route of the AP2 revised scheme in the study area will be entirely within the London Clay Formation, which is classified as Unproductive strata. This avoids any construction or decommissioning within aquifers and minimises the impacts on groundwater. The low permeability nature of the London Clay Formation effectively acts as a barrier to the downward migration of any existing contamination and is assumed to offer protection to the underlying aquifers.
- 5.6.59 The area is at risk of surface water flooding adjacent to the temporary shaft for the Atlas Road to Old Oak Common station box temporary logistics tunnel as a result of a local topographic depression and is not part of a wider surface water flowpath.
- 5.6.60 No temporary effects that will increase the risk of flooding from rivers, surface water, sewers and groundwater were reported in the main ES.

- 5.6.61 The proposed amendment will not give rise to new or different significant construction effects for water resources or flood risk and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.6.62 The temporary logistics tunnel will only be used in the construction phase and will be decommissioned before operation. Therefore there will be no new or different significant effects arising from operation.

#### *Mitigation and residual effects*

- 5.6.63 The assessment assumes implementation of the draft CoCP. The general approach to mitigation is set out in Volume 1, Section 9 of the main ES.
- 5.6.64 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.6.65 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Cumulative effects*

- 5.6.66 The proposed amendment will not give rise to new or different significant cumulative effects for water resources and flood risk, acting in combination with the another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **5.7 Summary of new or different likely residual significant effects as a result of the amendment**

- 5.7.1 The proposed Atlas Road to Old Oak Common station box temporary logistics tunnel does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA 4).

## **5.8 Alteration of land requirements at Atlas Road to maintain operation of bus depots (AP2-004-006)**

- 5.8.1 The Bill provides for a satellite construction compound on land at Atlas Road for the production of the pre-cast tunnel lining segments for the tunnel construction. The compound is currently occupied by two bus depots and a number of industrial and commercial buildings (refer to maps CT-05-009a-R1 and CT-06-009a-R1 in main ES Volume 2, CFA4 Map Book).
- 5.8.2 Since submission of the Bill, it has been identified that the land at the London United bus depot is no longer required (refer to CT-05-009a, CT-05-009a-R1, CT-06-009a and CT-06-009a-R1 in SES and AP2 ES Volume 2, CFA4 Map Book). This land, measuring approximately 0.77ha, will therefore be removed from the Bill. The London United bus depot will continue operation using its existing access to Atlas Road.
- 5.8.3 The main ES identified that Nash House, a derelict office building, would be demolished (see CFA Report 4, Section 2.4, in the main ES). Since submission of the

Bill, private developers have demolished this property and a residential development is under construction. However, as a result of the amendment, the land at Nash House is no longer required and therefore 0.34ha of land has been removed from the Bill.

- 5.8.4 As a consequence of the removal of the land at Nash House from the Bill, 180m<sup>2</sup> of additional land to that specified in the Bill is required temporarily during construction at Old Oak Lane and along the southern tow path of the GUC to provide access to utilities.
- 5.8.5 The Tower Transit bus depot in Atlas Road (1.1ha), and access to this, will be maintained throughout the construction period. The depot layout will be rearranged to incorporate land not currently owned by Tower Transit, but which is within the limits of the Bill. This will facilitate operation of the Tower Transit bus depot and to allow access from Atlas Road to the Atlas Road satellite construction compound (described in Section 2.4 in the main ES Volume 2).
- 5.8.6 As a result of the changes in land at Tower Transit bus depot in Atlas Road, the proposed access road bridge over the GUC, approximately 400m<sup>2</sup>, will be removed from the Bill. Approximately 380m<sup>2</sup> of additional land will be required approximately 100m to the south to allow for safe vehicular movement within the Atlas Road satellite compound.
- 5.8.7 The changes to land required for the bus depots and Nash House will result in an additional 1.5ha of land outside of the limits of the Bill being used temporarily at Atlas Road and Victoria Road for construction activities at Atlas Road Satellite Compound. This will include the demolition of the following properties;
- the whole of a warehouse superstore, Atlas Road;
  - a recycling and waste container business, Atlas Road;
  - Plantagenet House, 55 Victoria Road; and
  - a catering business, Atlas Road.
- 5.8.8 As a result of the changes to land required for the bus depots, approximately 1.2ha of land will be removed from the Bill and approximately 1.5ha of additional land will be required. The net additional land required is as a result of removing the whole of the properties listed above. The land required for the amendment will be returned to suitable development use, once construction is complete.
- 5.8.9 The alteration of land requirements at Atlas Road does not make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES for agriculture, forestry and soils and traffic and transport. However there were changes where reassessment was considered to be required for: air quality; cultural heritage; ecology; land quality; landscape and visual assessment; socio-economics; sound, noise and vibration; and water resources and flood risk

## **Air quality**

### *Scope, assumptions and limitations*

- 5.8.10 The assessment scope, key assumptions and limitations for air quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum

(Volume 5: Appendix CT-001-000/2) of the main ES as amended by the SMR Addendum 2 (SES and AP2 ES Volume 5: Appendix CT-001 -000/3).

### *Existing baseline*

- 5.8.11 The baseline air quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 4).
- 5.8.12 Future background pollutant concentrations have been sourced from the Defra background maps for 2017 that predict NO<sub>2</sub> and PM<sub>10</sub> concentrations in 2017 to be lower than in the 2012 baseline.
- 5.8.13 There are no statutory designated sites within the CFA that could potentially be affected by changes in air quality as a result of the amendment.

### *Future baseline*

#### **Construction (2017)**

- 5.8.14 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.15 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on air quality.

#### **Operation (2026)**

- 5.8.16 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.17 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.8.18 The main ES reported no significant effects from dust emissions on air quality during construction. The alteration of land requirements at Atlas Road will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.
- 5.8.19 The supporting assessment for this conclusion is described in SES and AP2 ES Volume 5, Appendix AQ-001-004.

### *Effects arising from operation*

- 5.8.20 The alteration of land requirements at Atlas Road will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.8.21 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the draft CoCP.

- 5.8.22 The assessment of the amendment has assumed that the general measures detailed Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.8.23 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.8.24 The main ES reported no residual significant effects on air quality during construction and operation. No new residual effects occur as a consequence of the alteration of land requirements at Atlas Road.

### *Cumulative effects*

- 5.8.25 There are no new or different likely significant cumulative effects for air quality as a result of the amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Cultural heritage**

#### *Scope, assumptions and limitations*

- 5.8.26 The assessment scope, key assumptions and limitations for cultural heritage are as set out Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

#### *Existing baseline*

- 5.8.27 The cultural heritage baseline for the assessment takes into account information collected for the purposes of the main ES, which included walk-over, geophysical survey, remote-sensing data, and from national and local registers. A full list is provided in Volume 2, Section 3.3 of the main ES. In addition, the baseline has been updated with the results of an archaeological and built heritage walk-over survey.
- 5.8.28 The baseline cultural heritage information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 6). The non-designated Plantagenet House, Victoria Road (asset reference KIL134)<sup>5</sup> is an additional asset identified since submission. This asset is a building of low value located within the additional land requirements at Atlas Road satellite compound.
- 5.8.29 The Atlas Road compound is located on the site of nineteenth century brickworks which extracted clay from the surrounding area. The potential survival of archaeological remains is likely to have been impacted by the clay extraction. There is also a high level of ground disturbance associated with twentieth century industrial development. There are no archaeological assets located within 400m of the Atlas Road satellite compound.
- 5.8.30 In the surrounding area there are two built heritage assets of moderate value. These are the GUC (asset reference KIL003), which is located adjacent to the Atlas Road compound, and Old Oak Lane Conservation Area (asset reference KIL005), which is 140m north of the Atlas Road compound.

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<sup>5</sup> SES and AP2 ES Volume 5 CH-002-004.

### *Future baseline*

#### **Construction (2017)**

- 5.8.31 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.32 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on cultural heritage.

#### **Operation (2026)**

- 5.8.33 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.34 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on cultural heritage.

### *Effects arising during construction*

- 5.8.35 The alteration of land requirements at Atlas Road will give rise to a new significant permanent moderate adverse effect resulting from the demolition of Plantagenet House, 55 Victoria Road (asset reference KIL134).

### *Effects arising from operation*

- 5.8.36 The alteration of land requirements at Atlas Road will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.8.37 The amendment will result in the demolition of the non-designated Plantagenet House (asset reference KIL134). This will be a high adverse impact on a low value asset resulting in a permanent moderate adverse residual effect. The mitigation of a building demolition is not possible. A programme of built heritage works as defined in the draft CoCP will be prepared to investigate, analyse, report and archive the asset.

### *Cumulative effects*

- 5.8.38 There are no new or different likely significant cumulative effects for cultural heritage as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Ecology**

### *Scope, assumptions and limitations*

- 5.8.39 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.



- 5.8.40 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP2 revised scheme.

### *Existing baseline*

- 5.8.41 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, additional survey work for bats and Phase 1 habitat mapping undertaken in 2014, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including Greenspace Information for Greater London, London Wildlife Trust and London Bat Group.
- 5.8.42 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 ES Volume 5, Appendix EC-001-001. For those receptors described in the main ES, further details are provided in Volume 2, CFA4, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.8.43 Designated sites relevant to the assessment (i.e. within or adjacent to the land required to maintain the bus depots at Atlas Road) include the following Local Wildlife Sites:
- London Canals Site of SMI – the site supports a number of scarce and uncommon wetland plants on its banks, brickwork and towpaths. The SMI is of county/metropolitan value. The site is adjacent to the land required for the amendment and the SMI is crossed at one location by a canal crossing point, consisting of the temporary construction vehicle bridge, which forms part of the alteration of land requirements at Atlas Road. This replaces the location previously assessed in the main ES; and
  - Silverlink Metro and Dudding Hill Loop in Ealing (SBI.II) – rail land with limited semi-natural habitat in narrow strips, with frequent ruderal vegetation and sections of woodland and scrub. The site is of district/borough value. A small part of the site is within the additional land required at Atlas Road.

### **Habitats**

- 5.8.44 The land required for the amendment comprises commercial premises with areas of hardstanding, occasional trees and a small area of rail side scrub habitat bordering the Cricklewood to Acton Wells Junction Railway Line. The habitat in the additional land required for the amendment is similar to that described in the main ES in relation to the land required for the Atlas Road satellite compound. The habitat, which lies within the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II, is of district/borough value.

### **Protected and/or notable species**

- 5.8.45 The additional land required contains buildings and trees that could support bats and common breeding birds, and small areas of rail side habitat that could support common reptiles and breeding birds.
- 5.8.46 The catering business building in Atlas Road was found to have moderate potential to support roosting bats during an initial building assessment undertaken from public rights of way in 2014.
- 5.8.47 In the main ES, bird assemblages in this area were assessed to be of up to local/parish value, while any identified reptile populations were assessed to be up to district/borough value. In the absence of detailed survey data, it is not possible to rule out that some trees or buildings may support maternity bat roosts of common species and/or roosts of rarer species of the population at the GUC. This bat assemblage was valued at up to county/metropolitan value in the main ES.

### *Future baseline*

#### **Construction (2017)**

- 5.8.48 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.49 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on ecological receptors.

#### **Operation (2026)**

- 5.8.50 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.51 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on ecological receptors.

### *Effects arising during construction*

#### **Avoidance and mitigation measures**

- 5.8.52 The assessment assumes implementation of the measures set out within the draft CoCP (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

#### **Designated sites**

- 5.8.53 The loss of approximately 2.4 ha of the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II (18% of the site) was considered in the main ES as a result of works in the Atlas Road area. The habitat loss will result in a permanent adverse effect on the integrity of the site that will be significant at the district/borough level.
- 5.8.54 The proposed amendment will result in the loss of an additional small area (0.1ha) of the SBI.II due to the alteration of land requirements at Atlas Road (AP2-004-006).

- 5.8.55 The proposed amendment will give rise to a different significant effect on the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II. However, this will not change the level of significance of the effects reported in the main ES.

### **Habitats**

- 5.8.56 The majority of the area affected by the amendment comprises built up land or areas of hardstanding with very little vegetation (such as occasional trees or shrubs for landscaping purposes). These amendments will not generate any new or different significant effects, or change the level of significance of the effects reported in the main ES.
- 5.8.57 The loss of approximately 6ha of railside scrub habitat in the local area, including that within the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II, was identified in the main ES as resulting in a permanent adverse effect on the conservation status of the habitat significant at the district/borough level.
- 5.8.58 The proposed amendment will result in the loss of an additional small area of scrub habitat (0.1ha) from within the SBI.II. This will give rise to a different significant effect on scrub habitat. However, this amendment will not change the level of significance of the effects reported in the main ES.

### **Protected and/or notable species**

- 5.8.59 The loss of a small number of buildings and trees that could potentially support maternity bat roosts of common species and/or roosts of rare species was assessed in the main ES on a precautionary basis. The potential loss of roost sites was found to have a permanent adverse effect on the conservation status of the local GUC bat assemblage, which would be significant at up to the county/metropolitan level.
- 5.8.60 In particular, the catering business building was found to have moderate bat roost potential and will be demolished by the amendment. The amendment therefore may result in a different significant effect, but does not change the up to county/metropolitan level adverse effect reported in the main ES.
- 5.8.61 The amendment will result in the loss of an additional small area (0.1ha) of terrestrial habitat for breeding birds and reptiles. However, these changes are not expected to result in any new or different significant effects.

### **Cumulative effects**

- 5.8.62 There are no new or different likely significant cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Mitigation and residual effects**

#### *Other mitigation measures*

- 5.8.63 Where required, replacement roosting bat provision will be provided within the existing limits of the Bill in accordance with the principles set out in the SMR (Volume 5: Appendix CT-001-000/1) and SMR Addendum (Volume 5: Appendix CT-001-000/2).

Following the provision of replacement roosts the adverse effect on the bat assemblage will reduce to a level where it is not significant.

- 5.8.64 No other mitigation measures to those identified in the main ES and SES are required.

### *Summary of likely residual effects*

- 5.8.65 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Effects arising from operation*

- 5.8.66 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

## **Land Quality**

- 5.8.67 The assessment scope, key assumptions and limitations for land quality are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Environmental baseline*

- 5.8.68 The baseline land quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA<sub>4</sub>, Section 8).
- 5.8.69 In addition, a summary of the baseline CSM for the areas associated with the additional provisions of the AP2 revised scheme is provided in Table 8.

Table 8: Summary of baseline CSM for sites which may pose a contaminative risk for the AP2 revised scheme

Area reference <sup>6</sup>	Area name and classification	Main potential impacts	Main baseline risk <sup>7</sup>
AP2-4-66, AP2-4-75, AP2-4-72	Former on-site mattress works, chemical works and petroleum jelly works	Potential impact on human health on-site from contamination by direct contact, ingestion and inhalation of contaminants in soil and soil-derived dust and contaminated waters.	Low
		Potential impact on human health off-site from migration of soil vapours and volatile organic compounds (by diffusion or due to wind).	Low

<sup>6</sup> Each area is assigned a unique identification number (see Volume 5: Appendix LQ-001-004).

<sup>7</sup> The moderate or high risks identified reflect the uncertainty in existing baseline information. Whilst there are unlikely to be properties or receptors that experience the reported high or moderate existing baseline risk in the absence of site investigation, a precautionary, worst-case risk is reported in the table.

*Future baseline*

**Construction (2017)**

- 5.8.70 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.71 None of the identified developments affect the assessment of the AP2 revised scheme’s likely construction impacts on land quality.

**Operation (2026)**

- 5.8.72 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.73 None of the identified developments affect the assessment of the AP2 revised scheme’s likely operational impacts on land quality.

*Effects arising during construction*

- 5.8.74 An assessment of the effects of contamination has been undertaken by comparing the CSM developed for potential contaminated land sites at baseline, construction and post construction stages.
- 5.8.75 Table 9 presents the summary of the construction effects. The construction risk assessment takes into account the implementation of the mitigation measures set out within the draft CoCP. The details of these comparisons are presented in SES and AP2 ES Volume 5: Appendix LQ-001-004.

Table 9: Summary of temporary (construction) effects

Area ref	Area name	Main baseline risk	Main construction risk	Construction effect and significance
AP2-4-66, AP2-4-75, AP2-4-72	Former on-site mattress works, chemical works and petroleum jelly works.	Potential impact on human health on-site from contamination by direct contact, ingestion and inhalation of contaminants in soil and soil-derived dust and contaminated waters = Low.  Potential impact off-site receptors due to migration of wind-blown dust = Low.	Not applicable - receptor not present  Low	Negligible (not significant)

- 5.8.76 The baseline and construction CSM have been compared to determine the change in level of risk to receptors during the construction stage, and thus to define the level of effects at the construction stage. Where there is no change between the main baseline risk and the main construction risk, the temporary effect significance is deemed to be negligible even if the risk is assessed to remain as high. This will be the case where the construction of the AP2 revised scheme does not alter the risks from an existing potentially contaminated site that is outside the construction boundary.

- 5.8.77 The additional land required will include a former chemical works and petroleum jelly works. Contaminants associated with the former industries listed above could be present and could include various metals, semi-metals, asbestos, inorganic compounds and organic compounds such as fuels, oils and solvents and ground gases or vapours. As such, construction activities at the Atlas Road satellite compound may disturb potentially contaminated land. With suitable measures included, such as those in the CoCP, the risks are considered to be not significant.
- 5.8.78 The alteration of land requirements at Atlas Road will not give rise to a new or different significant construction effect and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

- 5.8.79 In the main ES, users of the original scheme (i.e. rail passengers), whilst within trains, are at all routine times, within a controlled environment, and were therefore scoped out of the assessment.
- 5.8.80 The alteration of land requirements at Atlas Road will not give rise to a new or different significant operational effect.

#### *Mitigation and residual effects*

- 5.8.81 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.8.82 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Cumulative effects*

- 5.8.83 There are no new or different likely significant cumulative effects for land quality as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Landscape and visual assessment**

#### *Scope, assumptions and limitations*

- 5.8.84 The assessment scope, key assumptions and limitations for the landscape and visual assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.

#### *Existing baseline*

- 5.8.85 The area of land required for the amendment at Atlas Road to maintain operation of bus depots (AP2-004-006), is located within the North Acton Industrial and Commercial Zone LCA as described in the main ES (Volume 5, CFA4, LV-001-004). The site lies immediately to the north of the Old Oak Common Residential LCA as described in the main ES (Volume 2, CFA4, Section 9).

5.8.86 The following viewpoints are also located in close proximity to the area and are described in the main ES (Volume 5, CFA4, LV-001-004):

- viewpoint 019.2.002: view east, west and south from Wells House Road;
- viewpoint 020.4.001: view south-west along Victoria Road;
- viewpoint 020.3.002: view west from Victoria Road Play Area (closed during construction);
- viewpoint 020.4.003: view east from Old Oak Common Lane;
- viewpoint 020.2.004: view south-east from Midland Terrace and Shaftesbury Gardens;
- viewpoint 020.3.005: view north-west from the GUC towpath;
- viewpoint 020.2.006: view west from Stephenson Street;
- viewpoint 020.2.008: view east from Bashley Road;
- viewpoint 020.2.09: view west and north from Midland Terrace and Shaftesbury Gardens; and
- viewpoint 020.2.010: view west and north from Old Oak Lane.

#### *Future baseline*

##### **Construction (2017)**

5.8.87 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.

5.8.88 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on landscape and visual receptors.

##### **Operation (2026)**

5.8.89 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.

5.8.90 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on landscape and visual receptors.

#### *Effects arising during construction*

##### **Landscape assessment**

5.8.91 The North Acton Industrial and Commercial Zone LCA was assessed as being affected by the original scheme; and will also be affected by this amendment. The landscape is of limited value, is in fair condition and tranquillity is low. It is considered to be of low sensitivity to change. The main ES reported a minor adverse effect during construction due to the scale of the construction works in the vicinity of Atlas Road. The demolition works on Plantagenet House and the use of the site for part of the Atlas Road satellite compound will result in an increase in the scale of the works

assessed in the main ES, but in the context of the extensive works associated with the original scheme will not change the magnitude of impact in the wider LCA. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

- 5.8.92 The Old Oak Common Residential LCA was assessed as being affected by the original scheme; and will also be affected by this amendment. The landscape is valued by the local community, is in fair condition and tranquillity is low. Its residential and secluded character means that it is considered to be of medium sensitivity to change. The main ES reported a moderate adverse effect during construction due to the activity and presence of cranes, construction traffic, bridge replacement, road widening and traffic and pedestrian diversions. The amendment will require the demolition of Plantagenet House and will extend the Atlas Road satellite compound to the boundary of the Old Oak Common Residential LCA. The works taking place in the satellite compound were, in the original scheme, separated from the LCA by Tudor House and Plantagenet House. Only Tudor House will remain to provide this separation. As a result of the amendment, the works will increase the prominence of construction activity in the LCA. The proposed amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.

#### **Visual assessment**

- 5.8.93 Viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a major adverse significant effect due to the works to widen the A4000 Victoria Road, the presence of construction sites on the three open spaces in Victoria Road and removal of trees opening up views of the bridge and Victoria Road. The amendment will increase the scale of construction visible from these viewpoints, but will not give rise to a new or different significant effect and will not change the level of significance of the effects reported on these receptors in the main ES.
- 5.8.94 Viewpoint 020.2.010: view west and north from Old Oak Lane was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a moderate adverse significant adverse effect, due to the demolition of Rowan House and Nash House and the widening of the junction on the A4000 Victoria Road and the presence of the Atlas Road satellite compound. As a result of the amendment, the satellite compound will be visible obliquely from dwellings in Old Oak Lane, but directly visible from the building currently under construction on the site of Nash House (and included in this viewpoint for the assessment). The existing view from Old Oak Lane and from the building under construction is of an industrial site. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported on these receptors in the main ES.
- 5.8.95 The amendment will not be visible from the following viewpoints:
- viewpoint 019.2.002: view east, west and south from Wells House Road;
  - viewpoint 020.4.001: view south-west along Victoria Road;



- viewpoint 020.4.003: view east from Old Oak Common Lane;
- viewpoint 020.2.004: view south-east from Midland Terrace and Shaftesbury Gardens;
- viewpoint 020.3.005: view north-west from the GUC towpath;
- viewpoint 020.2.006: view west from Stephenson Street; and
- viewpoint 020.2.008: view east from Bashley Road.

5.8.96 Consequently, the amendment will not give rise to new or different significant effects on these viewpoints and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

#### **Landscape assessment**

- 5.8.97 On completion of the alteration of land requirements at Atlas Road the construction compound will be removed and the site returned to suitable development.
- 5.8.98 The North Acton Industrial and Commercial Zone LCA was assessed as being affected by the original scheme but will not be affected by this amendment. The main ES reported a negligible effect on the LCA. The development of the site occupied by the amendment after construction will be similar in scale, and largely compatible with existing landscape character. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effects reported in the main ES.
- 5.8.99 The Old Oak Common Residential LCA was assessed as being affected by the original scheme and will be further affected by this amendment. The main ES reported a minor adverse effect during years 1, 15 and 60 of operation due to the loss of trees and open space along Victoria Road. The removal of Plantagenet House and the trees and green space on the Plantagenet House site, which border Victoria Road, and their replacement with a vacant site, will result in a loss of prominent elements that currently provide a buffer between the extensive Atlas Road Industrial Estate to the north and the Old Oak Common Residential LCA. The magnitude of change is considered to be medium in year 1 of operation. The medium magnitude of change combined with the medium sensitivity of the character area will result in a moderate adverse significant effect in year 1 of operation. The amendment will generate a different significant effect and this will change the level of significance of the effect in the main ES.
- 5.8.100 Replacement planting will gradually restore the vegetation structure of the area around Victoria Road and effects will reduce to non-significant by year 15.

#### **Visual assessment**

- 5.8.101 Viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens, and viewpoint 020.3.002: view west from Victoria Road Play Area, were assessed as being affected by the original scheme and will also be affected by this amendment. The main ES reported moderate adverse significant effects on both viewpoints, remaining moderate adverse by years 15 and 60, due to the widening of

the A4000 Victoria Road and the loss of trees, resulting in the increased prominence of Victoria Road and the rail bridge in the foreground of the view. The loss of grass, trees and Plantagenet House and the opening up of longer views to the site beyond will result in a partial loss of key characteristics and an alteration to the view. The amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

- 5.8.102 Viewpoint 020.2.010: view west and north from Old Oak Lane was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a minor adverse effect due to the loss of trees and the widening of the Old Oak Lane. As a result of the amendment, the satellite compound will be restored to its former condition. Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported on these receptors in the main ES.
- 5.8.103 The amendment will not be visible from the following viewpoints:
- viewpoint 019.2.002: view east, west and south from Wells House Road;
  - viewpoint 020.4.001: view south-west along Victoria Road;
  - viewpoint 020.4.003: view east from Old Oak Common Lane;
  - viewpoint 020.2.004: view south-east from Midland Terrace and Shaftesbury Gardens;
  - viewpoint 020.3.005: view north-west from the GUC towpath;
  - viewpoint 020.2.006: view west from Stephenson Street; and
  - viewpoint 020.2.008: view east from Bashley Road.
- 5.8.104 Consequently, the amendment will not give rise to new or different significant effects on these viewpoints and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.8.105 No additional mitigation measures to those identified in the main ES are proposed.
- 5.8.106 There are no new or different significant residual construction or operational effects for landscape and visual as a result of the proposed amendment in comparison with the main ES and SES scheme.

#### *Cumulative effects*

- 5.8.107 There are no new or different likely significant cumulative effects on landscape character and views as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Socio-economics**

### *Scope, assumptions and limitations*

- 5.8.108 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Environmental baseline*

- 5.8.109 The baseline socio-economics information for CFA 4 Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA Report 4, Section 10).

### *Future baseline*

#### **Construction (2017)**

- 5.8.110 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.111 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on socio-economics.

#### **Operation (2026)**

- 5.8.112 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.113 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on socio-economics.

### *Effects arising during construction*

- 5.8.114 The amendment includes the alteration of land required for the AP2 revised scheme to facilitate the continued operation of the bus depots on Atlas Road. This amendment will result in the displacement of a recycling and waste container business and retail warehouse premises on Atlas Road and the Plantagenet House warehouse on Victoria Road. It is considered likely, given the availability of alternative premises that the occupiers would be able to find and move to alternative local premises. The effect of the amendment on these resources and their employees is assessed overall to be minor adverse and is therefore not significant.
- 5.8.115 The amendment will also result in a storage yard on Atlas Road no longer being displaced as a result of land required. This was reported as minor adverse and not significant in the main ES. This effect is removed as a result of the amendment. Occupiers will be able to remain at these premises and any employment will no longer be lost or displaced as a result of construction activities.

- 5.8.116 It is estimated that the amendment would result in the displacement or possible loss of a net total of 155 jobs in addition to those identified as lost in the main ES within the Kilburn (Brent) to Old Oak Common area. However, taking into account total employment within the local boroughs, the impact on the local economy from the loss/relocation of these jobs is considered to be relatively minor compared to the scale of economic activity and opportunity in the area.

#### *Effects arising from operation*

- 5.8.117 The alteration of land requirements at Atlas Road will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

- 5.8.118 No additional mitigation measures to those identified in the main ES and SES are required.

- 5.8.119 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Cumulative effects*

- 5.8.120 There are no new or different likely significant cumulative effects for socio-economics as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

### **Sound, noise and vibration**

#### *Scope, assumptions and limitations*

- 5.8.121 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.8.122 Local assumptions and limitations for sound, noise and vibration are set out in main ES Volume 2, CFA4 Report.

#### *Existing baseline*

- 5.8.123 The baseline sound, noise and vibration information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 11 and Volume 5: Appendix SV-002-004).

#### *Future baseline*

### **Construction (2017)**

- 5.8.124 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.125 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on sound, noise and vibration.

## **Operation (2026)**

- 5.8.126 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.127 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on sound, noise and vibration.

### *Effects arising during construction*

- 5.8.128 The closest sensitive receptors to the works are residential and non-residential properties located around Stephenson Street, located approximately 140m to the east of the additional land. These are represented by assessment locations 700412, 720025 and 700413 (see main ES, Volume 5, Map books Sound Noise and Vibration – London Met Map Series SV-03).
- 5.8.129 The works associated with the proposed amendment do not represent a substantial intensification of the works reported in the main ES. The alteration of land requirements at Atlas Road will therefore not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.

### *Effects arising from operation*

- 5.8.130 The alteration of land requirements at Atlas Road will not give rise to any new or different significant operational effects because no operational activities are proposed.

### *Mitigation and residual effects*

- 5.8.131 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.8.132 No new or different residual significant effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Cumulative effects*

- 5.8.133 There are no new or different likely significant cumulative effects for construction or operational sound, noise and vibration as a result of the proposed amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **Water resources and flood risk assessment**

### *Scope, assumptions and limitations*

- 5.8.134 The assessment scope, key assumptions and limitations for the water resources and flood risk assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.

### *Environmental baseline*

- 5.8.135 The baseline information for surface and groundwater resources in the Kilburn (Brent) to Old Oak Common area is described in the main ES (Volume 2, CFA4, Section 13).
- 5.8.136 The only surface water feature at this site is the GUC. The Euston tunnel will pass beneath the GUC. The canal runs adjacent to the route between Kensal Green Cemetery and Mitre Bridge. The Atlas Road satellite compound is south of and adjacent to the canal. The GUC is designated as an artificial water body under the WFD, with a current overall status of 'Moderate'.
- 5.8.137 This compound is underlain by the London Clay Formation, which is classified as unproductive strata. There are no superficial deposits present on or within 250m of the proposed Atlas Road satellite compound.
- 5.8.138 In the vicinity of the construction site at Atlas Road, there are isolated areas with a risk of surface water flooding during a 1 in 30 annual probability (3.33%) rainfall event in the uFMfSW. This is confirmed in the Preliminary Flood Risk Assessment mapping.

### *Future baseline*

#### **Construction (2017)**

- 5.8.139 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.8.140 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on water resources and flood risk.

#### **Operation (2026)**

- 5.8.141 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.8.142 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on water resources and flood risk.

### *Effects arising during construction*

- 5.8.143 All work will take place across the London Clay Formation, and as such there are no groundwater features in the vicinity of this amendment. The Atlas Road satellite compound will be located adjacent to the GUC and will include a temporary vehicular crossing over the GUC, and construction elements such as storage facilities, temporary earthworks and accommodation facilities, will be located close to the GUC. Therefore, construction of the compound and associated elements has the potential to impact on the water flow and quality of the GUC. The potential unmitigated impact is likely to be minor as it may be measurable but would not impact on the WFD status. The measures set out in the draft CoCP will minimise the impacts on the GUC and therefore the residual impact is negligible with neutral effect and therefore is not significant.

5.8.144 Due to the isolated areas at risk of surface water flooding, the main ES did not identify any significant effects as a result of the construction site at Atlas Road. The alteration of land requirements at Atlas Road will result in no change in the likely significant effects reported in the main ES.

5.8.145 Therefore, the proposed Atlas Road satellite compound will not give rise to new or different significant construction effects for water resources or flood risk, and will not change the level of significance of the effects reported in the main ES.

#### *Effects arising from operation*

5.8.146 The Atlas Road satellite compound will only be required during the construction of the AP2 revised scheme. As a result, the Atlas Road satellite compound will not exist during the operation of the AP2 revised scheme.

5.8.147 The Atlas Road satellite compound will not give rise to new or different significant operational effects for water resources and flood risk, and will not change the level of significance of the effects reported in the main ES.

#### *Mitigation and residual effects*

5.8.148 The assessment assumes implementation of the draft CoCP. The general approach to mitigation is set out in the main ES Volume 1.

5.8.149 Surface water runoff and drainage systems from permanent infrastructure will be designed to attenuate runoff before being discharged to the Thames Water sewer network to address flood risk. This attenuation will also serve to reduce the risk of contaminated runoff entering Thames Water sewers as a result of the operation of the AP2 revised scheme.

5.8.150 No new or different residual effects occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

#### *Cumulative effects*

5.8.151 There are no new or different significant cumulative effects for water resources and flood risk as a result of the proposed amendment acting in combination with another amendment in AP2 or as a result of any relevant committed development interacting with the AP2 revised scheme.

## **5.9 Summary of new or different likely residual significant effects as a result of the amendment**

5.9.1 The alteration of land requirements at Atlas Road will give rise to new and different significant effects with respect to cultural heritage.

5.9.2 The amendment will give rise to a new significant permanent moderate adverse effect on cultural heritage resulting from the demolition of Plantagenet House, 55 Victoria Road (asset reference KIL134).

5.9.3 In respect of other environmental topics, the alteration of land requirements at Atlas Road does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA4).

## 5.10 Alteration of land required for the conveyor route running from Atlas Road to Victoria Road Crossover box (AP2-004-007)

- 5.10.1 The Bill provides for a network of enclosed conveyors that will be installed to link the proposed Atlas Road satellite compound, the proposed Willesden Euroterminal main compound, the proposed Victoria Road tunnel drive main compound and the Victoria Road crossover box main compound. The conveyors will be approximately 3.3m above ground level and will allow material to be transported between compounds and reduce construction traffic on the local highway network.
- 5.10.2 Since submission of the Bill it has been identified that the amount of land required for the route of the conveyors can be reduced by 0.34ha. The conveyor will be re-routed to cross the Cricklewood to Acton Wells Junction Railway Line further south, closer to Victoria Road by 120m and away from the rear of the commercial properties on Chandos Road (refer to map CT-05-009a in SES and AP2 ES Volume 2, CFA4 Map Book).
- 5.10.3 The relocation of the conveyor route is not considered to make changes that require a reassessment of the environmental effects or proposed mitigation as set out in the main ES for agriculture, forestry and soils; community; cultural heritage; land quality; sound, noise and vibration; traffic and transport; and water resources and flood risk assessment. However there were changes where reassessment was considered to be required for air quality; ecology; and landscape and visual assessment.

### Air quality

#### *Scope, assumptions and limitations*

- 5.10.4 The assessment scope, key assumptions and limitations for air quality are set out in Volume 1, the SMR (Volume 5: Appendix CT-001 -000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES as amended by the SMR Addendum 2 (SES and AP2 ES Volume 5: Appendix CT-001 -000/3).

#### *Environmental baseline*

- 5.10.5 The baseline air quality information for Kilburn (Brent) to Old Oak Common is described in the main ES (Volume 2, CFA4, Section 4).
- 5.10.6 Future background pollutant concentrations have been sourced from the Defra background maps for 2017 that predict NO<sub>2</sub> and PM<sub>10</sub> concentrations in 2017 to be lower than in the 2012 baseline.
- 5.10.7 There are no statutory designated sites within the CFA that could potentially be affected by changes in air quality as a result of the amendment.

#### *Future baseline*

#### **Construction (2017)**

- 5.10.8 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.



- 5.10.9 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on air quality.

### **Operation (2026)**

- 5.10.10 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.10.11 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on air quality.

### *Effects arising during construction*

- 5.10.12 The main ES reported no significant effects from dust emissions on air quality during construction, assuming application of the measures in the draft CoCP. The relocation of the conveyor route will not give rise to any new or different significant construction effects and will not change the level of significance of the effects reported in the main ES.
- 5.10.13 The supporting assessment for this conclusion is described in SES and AP ES Appendix AQ-001-004.

### *Effects arising from operation*

- 5.10.14 The main ES reported no significant effects on air quality during operation. The relocation of the conveyor route will not give rise to any new or different significant operational effects and will not change the level of significance of the effects reported in the main ES.

### *Mitigation and residual effects*

- 5.10.15 Emissions to the atmosphere will be controlled and managed during construction through the route-wide implementation of the draft CoCP.
- 5.10.16 The assessment of the amendment has assumed that the general measures detailed Section 7 of the draft CoCP (Volume 5: Appendix CT-003-000) in the main ES will be implemented.
- 5.10.17 No additional mitigation measures to those identified in the main ES and SES are required.
- 5.10.18 The main ES reported no residual significant effects on air quality during construction and operation. No new residual effects occur as a consequence of the relocation of the conveyor route.

### *Cumulative effects*

- 5.10.19 There are no new or different likely significant cumulative effects for air quality as a result of the amendment acting in combination with another amendment in AP2, or as a result of any relevant committed development interacting with the AP2 revised scheme.

## Ecology

### *Scope, assumptions and limitations*

- 5.10.20 The assessment scope for ecology is as set out in Volume 1 of the SES and AP2 ES. The key assumptions and limitations, and the methodology for determining significance of effects are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES.
- 5.10.21 To address any limitations in data, a precautionary baseline has been considered according to the guidance reported in the main ES, Volume 5: Appendix CT-001-000/2. This constitutes a 'reasonable worst-case' basis for the subsequent assessment. The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the AP2 revised scheme.

### *Existing baseline*

- 5.10.22 The ecological baseline of the land required for the amendment has been based on field data collated for the main ES, additional Phase 1 habitat surveys undertaken in 2014, aerial photography and relevant existing information gathered from national organisations and from regional and local sources including: Greenspace Information for Greater London, London Wildlife Trust and London Bat Group.
- 5.10.23 A summary of the baseline information relevant to the assessment of the amendment is provided below. This takes account of any relevant new or updated baseline information provided in SES and AP2 ES Volume 5, Appendix EC-001-001. For those receptors described in the main ES, further details are provided in Volume 2, CFA4, Section 7 and in Volume 5, including maps EC-01 to EC-12.

### **Designated sites**

- 5.10.24 There is one designated site in the vicinity of the amendment, which remains as described in Volume 2, CFA 4, Section 7, of the main ES. This is the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II, comprising of rail land with limited semi-natural habitat including ruderal vegetation, woodland and scrub. A small part of the site is within the additional land required for the installation of the conveyors that form the amendment. The site is of district/borough value.

### **Habitats**

- 5.10.25 The land required for the amendment comprises commercial premises with areas of hardstanding, occasional trees and a small area of rail side scrub habitat bordering the Cricklewood to Acton Wells Junction Railway Line (which forms part of Silverlink Metro and Dudding Hill Loop in Ealing SBI.II).
- 5.10.26 Additional surveys undertaken since the submission of the ES in this area, recorded habitats comprising largely of scrub, rough grassland, and small isolated woods / tree belts on and around existing railway land. The habitat in the additional land required for the amendment is similar to that described in the main ES which is required for the Atlas Road satellite compound. The habitat, which lies within the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II, is of district/borough value.

### **Protected and/or notable species**

- 5.10.27 The protected/notable species of relevance to the amendment are breeding birds and common reptile species, where suitable habitat is present along the existing railways, and bats (potential for building or tree roosts and the loss of foraging and commuting habitat along the railway).
- 5.10.28 In the main ES, bird assemblages in this area were assessed to be of up to local/parish value, while any identified reptile populations were assessed to be up to district/borough value. In the absence of detailed survey data, it is not possible to rule out that some trees or buildings may support maternity bat roosts of common species and/or roosts of rarer species of the Victoria Road Bridge bat assemblage. This bat assemblage was assessed as of up to county/metropolitan value in the main ES.

### *Future baseline*

#### **Construction (2017)**

- 5.10.29 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.10.30 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on ecological receptors.

#### **Operation (2026)**

- 5.10.31 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.10.32 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on ecological receptors.

### *Effects arising during construction*

#### **Avoidance and mitigation measures**

- 5.10.33 The assessment assumes implementation of the measures set out within the draft Code of Construction Practice (CoCP) (Volume 5: Appendix CT-003-000 of the main ES), which includes translocation of protected species where appropriate.

#### **Designated sites**

- 5.10.34 The loss of approximately 2.4 ha of the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II (18% of the site) was considered in the main ES as a result of works in the Atlas Road area. This impact was found to result in a permanent adverse effect on site integrity, significant at the district/borough level.
- 5.10.35 The amendment will require approximately 0.1 ha less of the Silverlink Metro and Dudding Hill in Ealing SBI.II than that required in the Bill.
- 5.10.36 The proposed amendment will give rise to a different significant effect on the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II. However, this will not change the level of significance of the effects reported in the main ES.

## Habitats

- 5.10.37 The loss of approximately 6ha of railside scrub habitat in the local area, including that within the Silverlink Metro and Dudding Hill Loop in Ealing SBI.II, was considered in the main ES. The loss of scrub habitat was found to result in a permanent adverse effect on the conservation status of the habitat significant at the district/borough level.
- 5.10.38 The amendment will reduce the level of habitat loss from the Silverlink Metro and Dudding Hill in Ealing SBI.II site by 0.1ha. The proposed amendment will give rise to a different significant effect as the habitat loss to the SBI.II will be slightly reduced. However, this amendment will not change the level of significance of the effects on conservation status reported in the main ES.

## Protected and/or notable species

- 5.10.39 The loss of a small number of buildings and trees that could potentially support maternity bat roosts of common species and/or roosts of rare species was assessed in the main ES on a precautionary basis. The potential loss of roost sites was found to have a permanent adverse effect on the conservation status of the local Victoria Road Bridge bat assemblage, which would be significant at up to the county/metropolitan level.
- 5.10.40 The amendment will result in a slight reduction in loss of railside habitat which will benefit these species in comparison to the effects in the main ES. However, these changes will not generate any new or different significant effects, or change the level of significance of effects reported in the main ES.

## Cumulative effects

- 5.10.41 There are no new or different likely cumulative effects for ecology as a result of the proposed amendment acting in combination with another amendment in AP2.

## Mitigation and residual effects

### *Other mitigation measures*

- 5.10.42 No additional mitigation measures to those identified in the main ES and SES are required.

### *Summary of likely residual effects*

- 5.10.43 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

### *Effects arising from operation*

- 5.10.44 No new or different residual effects on ecological receptors occur as a consequence of the amendment. The significant residual effects of the AP2 revised scheme in this area are therefore unchanged from those reported in the main ES.

## Landscape and Visual Assessment

### *Scope, assumptions and limitations*

- 5.10.45 The assessment scope, key assumptions and limitations for the landscape and visual assessment are as set out in Volume 1, the SMR (Volume 5: Appendix CT-001-000/1) and the SMR Addendum (Volume 5: Appendix CT-001-000/2) of the main ES. An update to the methodology for the landscape and visual assessment is also described in Volume 1 of the AP1 ES.
- 5.10.46 For the purposes of this assessment, the height of the conveyors is assumed to be a maximum height of 3.3m above ground level.

### *Existing baseline*

- 5.10.47 The proposed alteration of land required for the conveyor route running from Atlas Road to Victoria Road Crossover box (AP2-004-007), is located within the North Acton Industrial and Commercial Zone LCA as described in the main ES (Volume 5, CFA4, LV-001-004) and adjacent to the Old Oak Common Residential LCA, as described in the main ES (Volume 2, CFA4, Section 9).
- 5.10.48 The following viewpoints are located in close proximity to the area and are described in the main ES (Volume 5, CFA4, LV-001-004):
- viewpoint 020.4.001: view south-west along Victoria Road;
  - viewpoint 020.3.005: view north-west from the GUC towpath;
  - viewpoint 020.2.006: view west from Stephenson Street;
  - viewpoint 020.2.008: view east from Bashley Road;
  - viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens; and
  - viewpoint 020.2.010: view west and north from Old Oak Lane.

### *Future baseline*

#### **Construction (2017)**

- 5.10.49 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2017, additional to those identified in the main ES.
- 5.10.50 None of the identified developments affect the assessment of the AP2 revised scheme's likely construction impacts on landscape and visual receptors.

#### **Operation (2026)**

- 5.10.51 Volume 5: Appendix CT-004-000 provides details of the developments which are assumed to have been implemented by 2026, additional to those identified in the main ES.
- 5.10.52 None of the identified developments affect the assessment of the AP2 revised scheme's likely operational impacts on landscape and visual receptors.

### *Effects arising during construction*

#### **Landscape assessment**

- 5.10.53 The Old Oak Common Residential LCA was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a moderate adverse effect during construction due to the activity and presence of cranes, construction traffic, bridge replacement, road widening and traffic and pedestrian diversions. The amendment will be inconspicuous in the context of the works already taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.10.54 The North Acton Industrial and Commercial Zone LCA was assessed as non-significantly affected by the original scheme. The main ES reported a minor adverse effect due to the extensive construction works taking place in the LCA. The amendment will be inconspicuous in the context of the works already taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.

#### **Visual assessment**

- 5.10.55 The main ES reported that the aerial conveyors and the temporary bridge crossing over the GUC would be clearly visible in the foreground in views from the GUC towpath. In the amendment, two conveyors will also cross Victoria Road between the Victoria Road tunnel drive main compound and the Victoria Road crossover box main compound.
- 5.10.56 Viewpoint 020.4.001: view south-west along Victoria Road was assessed as being affected by the original scheme; and will also be affected by this amendment. The main ES reported a minor adverse effect due to the bridge widening works and the close proximity of the Victoria Road tunnel drive main compound and the Victoria Road crossover box main compound. The amendment will introduce new elements into the view, but they will be viewed in the context of the works taking place as part of the original scheme. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.10.57 Viewpoint 020.3.005: view north-west from the GUC towpath viewpoint was assessed as being affected by the original scheme. The main ES reported a moderate adverse significant effect due to the presence of the aerial conveyors and temporary bridge crossing over the GUC in close views. The amendment will not result in any change to the view assessed in the ES. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.
- 5.10.58 Viewpoint 020.2.009: view west and north from Midland Terrace and Shaftesbury Gardens was assessed as being affected by the original scheme. The main ES reported a major adverse significant effect due to the works to widen the A4000 Victoria Road, the presence of construction sites on the three open spaces in Victoria Road and removal of trees opening up views of the bridge and Victoria Road. In the amendment,

the conveyor will cross Victoria Road on the west side of the railway bridge, descending to ground level in the Victoria Road tunnel drive main compound. It will be largely screened by the bridge and the Cricklewood to Acton Wells Line from this viewpoint. The amendment will not give rise to new or different significant effects and will not change the level of significance of the effect reported in the main ES.

5.10.59 The amendment will not be visible from the following viewpoints:

- viewpoint 020.2.006: view west from Stephenson Street;
- viewpoint 020.2.008: view east from Bashley Road; and
- viewpoint 020.2.010: view west and north from Old Oak Lane.

5.10.60 Consequently, the amendment will not give rise to new or different significant effects and will not change the level of significance of the effects on these receptors reported in the main ES on these viewpoints.

### *Effects arising from operation*

5.10.61 The conveyor will only be present during the construction phase. Therefore, the proposed amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

### *Cumulative effects*

5.10.62 There will be no new or different likely cumulative effects on landscape character or views as a result of the changes acting in combination with AP1, or as a result of any relevant committed developments.

5.10.63 The consequential cumulative effects of committed developments on LCA and viewpoints remain as reported in the main ES (Volume 2, CFA4, Section 9 and Volume 5, CFA4, LV-001-004).

## **5.11 Summary of new or different likely residual significant effects as a result of the amendment**

5.11.1 The alteration of land required for the conveyor route running from Atlas Road to Victoria Road Crossover box will give rise to different significant effects with regards to ecology. The amendment will require approximately 0.1 ha less of the Silverlink Metro and Dudding Hill in Ealing SBI.II than that required in the Bill. This will give rise to a reduced significant effect on the site integrity and conservation status of the SBI.II; however, the level of significance of the effects will remain unchanged from those reported in the main ES.

5.11.2 In respect of other environmental topics, the alteration of land required for the conveyor route does not change the significance of the environmental effects or proposed mitigation as set out in the main ES (Volume 2, CFA4).

## **6 Combined effects of amendments in this CFA due to changes in traffic flows**

- 6.1.1 All of the effects of the changes proposed in this CFA have been described above and there are no further combined effects to report.





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