

HIGH SPEED RAIL (LONDON - WEST MIDLANDS)

Supplementary Environmental Statement 2 and
Additional Provision 3 Environmental Statement

Non-technical summary

September 2015

SES2 and AP3 ES 3.0



Department
for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

A report prepared for High Speed Two (HS2) Limited:

ARUP **AECOM**

High Speed Two (HS2) Limited,
One Canada Square,
London
E14 5AB

Details of how to obtain further copies are available from HS2 Ltd.

Telephone: 020 7944 4908

General email enquiries: HS2enquiries@hs2.org.uk

Website: www.gov.uk/hs2

Copyright © High Speed Two (HS2) Limited, 2015, except where otherwise stated.

High Speed Two (HS2) Limited has actively considered the needs of blind and partially sighted people in accessing this document. The text will be made available in full on the HS2 website. The text may be freely downloaded and translated by individuals or organisations for conversion into other accessible formats. If you have other needs in this regard please contact High Speed Two (HS2) Limited.



Printed in Great Britain on paper
containing at least 75% recycled fibre.

Contents

1. Introduction to the SES2 and the AP3 ES	1	5. Corrections to the main ES	25
1.1 Purpose of this Non-technical summary	1	6. Summary of residual environmental effects for SES2 changes	27
1.2 Background to High Speed Two	1	6.1 Summary of residual environmental effects	27
1.3 Terminology used to describe the HS2 scheme	4		
1.4 The SES2 and the AP3 ES	5	Part 2: Additional Provision 3 Environmental Statement	47
1.5 Structure of the SES2 and the AP3 ES	7		
1.6 Approach to mitigation associated with the SES2 and the AP3 ES	10	7. Additional Provision 3 Environmental Statement	47
1.7 Consultation on the SES2 and the AP3 ES	10	7.1 Introduction	47
1.8 Assessment approach	10	7.2 Summary of amendments within the AP3	47
Part 1: Supplementary Environmental Statement 2	13	8. Summary of residual environmental effects for AP3 amendments	57
2. Introduction to the Supplementary Environmental Statement 2	13	8.1 Summary of residual environmental effects	57
3. Updated and new environmental baseline information	15		
4. Changes to the design and construction assumptions that do not require amendments to the Bill	17		
4.1 Introduction	17		
4.2 Summary of changes to the design and construction assumptions that do not require amendments to the Bill	17		

Table 1: Scheme definitions	4
Table 2: Summary of changes to the design and to construction assumptions within CFA1 - Euston station and approach	19
Table 3: Summary of changes to the design and to construction assumptions not requiring a change to the Bill within CFA2 - Camden Town	21
Table 4: Summary of changes to the design and to construction assumptions not requiring a change to the Bill within CFA3 - Primrose Hill to Kilburn (Camden)	23
Table 5: Summary of amendments within CFA1 - Euston station and approach	49
Table 6: Summary of amendments within CFA2 - Camden Town	53
Table 7: Summary of amendments within CFA3 - Primrose Hill to Kilburn (Camden)	55

Figure 1: Phase One route showing the community forum areas with and without AP ₃ amendments and SES ₂ design changes and changes to construction assumptions	8
Figure 2: Approximate location of the SES changes to the design and to construction assumptions for Community Forum Area 1 – Euston station and approach	18
Figure 3: Approximate location of the SES changes to the design and to construction assumptions for Community Forum Area 2 – Camden Town	20
Figure 4: Approximate location of the SES changes to the design and to construction assumptions for Community Forum Area 3 – Primrose Hill to Kilburn (Camden)	22
Figure 5: Approximate location of AP ₃ amendments for Community Forum Area 1 – Euston station and approach	48
Figure 6: Approximate location of AP ₃ amendments for Community Forum Area 2 – Camden Town	52
Figure 7: Approximate location of AP ₃ amendments for Community Forum Area 3 – Primrose Hill to Kilburn (Camden)	54

1. Introduction to the SES2 and the AP3 ES

1.1 Purpose of this Non-technical summary

This document is the Non-technical summary (NTS) of the Supplementary Environmental Statement 2 ('SES2') and the Additional Provision 3 Environmental Statement ('AP3 ES') to the High Speed Rail (London-West Midlands) Bill ('the Bill'). Its main purpose is to report any new or different likely residual significant environmental effects arising from the updates and changes reported in the SES2 and the amendments reported within the AP3 ES. These new or different likely residual significant environmental effects are compared to those contained within the Environmental Statement (ES), which accompanied the Bill submitted to Parliament in November 2013 ('the main ES'), as updated by the Supplementary Environmental Statement ('SES') (July 2015). The Additional Provision 2 ES ('AP2 ES') amendments are also taken into account where relevant.

1.2 Background to High Speed Two

Phase One of High Speed Two (HS2) will provide a new north-south railway between London, Birmingham and the West Midlands. Phase Two of HS2 will comprise new lines between the West Midlands, Leeds and Manchester, completing what is known as the 'Y network'. Phase Two is not the subject of this document.

If enacted by Parliament, the Bill will provide the powers to construct, operate and maintain Phase One of HS2. The Bill was accompanied by the main ES. The main ES presented the findings of the environmental impact assessment (EIA) for the scheme, outlining the assessment scope and methodology, identifying likely significant environmental effects, mitigation measures to reduce or avoid significant environmental effects, and describing residual significant environmental effects, which remain after all mitigation has been put in place.

Since the deposit of the Bill, a number of amendments (i.e. changes that require amendments to the Bill) to the scheme have been identified. These have been promoted in Parliament through two additional provisions.

The first was deposited in Parliament in September 2014 ('AP1'), which focused on community forum areas (CFAs) 7 (Colne Valley) to 26 (Washwood Heath to Curzon Street). The second was deposited in Parliament in July 2015 ('AP2'), which focused on CFAs 4 (Kilburn (Brent) to Old Oak Common) to 26. These were each accompanied by an ES. In addition, an SES was deposited in July 2015 at the same time as the AP2. The SES focused on CFAs 4 to 26 and described and assessed the consequences of new environmental baseline information, changes to construction assumptions, design changes that do not require amendments to the Bill, and corrections to the main ES.

A number of additional amendments to the Bill have been identified for CFAs 1 (Euston station and approach) to 3 (Primrose Hill to Kilburn (Camden)). Those amendments that require additional powers in the Bill are being promoted via Additional Provision 3 ('AP3'). The associated AP3 ES describes these amendments and reports the associated likely significant environmental effects.

In addition to these amendments, there are also a number of design changes within CFAs 1 to 3 and other environmental information and

changes to construction assumptions (collectively referred to as 'SES2 changes') within CFAs 1 to 5 (Northolt Corridor) that do not require amendments to the Bill. These are reported in the SES2. The SES2 and the AP3 ES are separate environmental statements, but have been produced as combined volumes (see section 1.4 of this report for further details).

The most substantial of the SES2 changes relate to Euston station. Following deposit of the Bill and subsequent discussions with stakeholders, Sir David Higgins undertook a review of the delivery of HS2 Phase One, as set out in *HS2 Plus: a report by David Higgins*, in March 2014. The review questioned whether the Euston proposal was ambitious enough in delivering the best value to the local area and the national economy, and suggested further work should be undertaken on an alternative level deck design (where the conventional tracks would be lowered to provide a level deck across the HS2 and conventional parts of the station).

Following the HS2 Plus report, the Department for Transport, HS2 Ltd, Network Rail and Transport for London (TfL) began to develop revised proposals for the station, taking account of the need to minimise disruption to the

operation of the conventional station and to enable over site development (OSD) in order to meet the aspirations of the Euston Area Plan (EAP). This included engagement with the London Borough of Camden (LBC) and relevant train operating companies. This has involved the reconsideration of previous options, including a level deck option, and the development of new options in the light of the changed requirements. This has led to a revised design and construction programme for CFA1 that is assessed in the SES2 and the AP3 ES.

As the design changes within CFA1 are substantial, the CFA1 report presents a full assessment of the entire revised scheme within the Euston station and approach area and replaces the CFA1 report from the main ES. Since the majority of the design changes within CFA1 can be carried out without amendments to the Bill, the assessment is reported in the SES2 section of the CFA1 report. In addition to design changes, the SES2 for CFA1 also assesses new environmental baseline information, changes to construction assumptions, updates to transport models and corrections to the main ES.

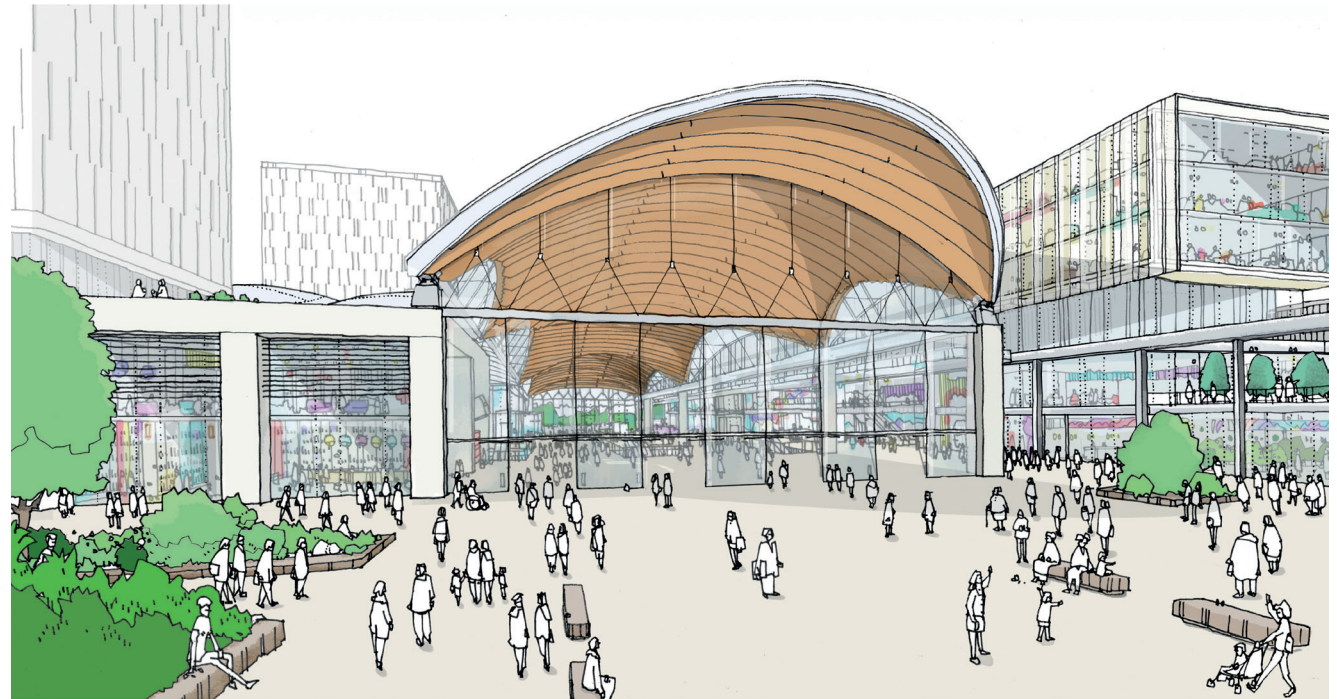
The rest of the SES2 covers CFAs 2 to 5. The contents of the relevant CFA reports depend on the nature of the new environmental information presented for these areas:

- CFAs 2 and 3: report any new or different likely significant environmental effects from a number of design changes in these areas and assess new environmental baseline information, changes to construction assumptions, and updates to transport models;
- CFA4: assesses changes to construction assumptions, updates to transport models, changes to passenger numbers at Old Oak Common station as a result of design changes in CFA1 and the removal of the HS1-HS2 Link, and a correction to the main ES. There are no design changes in this CFA area; and
- CFA5: assesses changes to construction assumptions as a result of changes in the design and construction assumptions at Euston. There are no design changes in this CFA area.

The AP3 ES reports the assessment of the likely significant effects from amendments to the Bill powers in CFAs 1 to 3. There are no amendments to Bill powers in CFAs 4 or 5.

A description of the design changes and amendments within CFAs 1 to 3 is provided in Section 1.4 of this report. Section 1.4 also highlights any changes to construction assumptions.

A formal consultation will be undertaken on the SES2 and the AP3 ES. There will also be a petitioning period for those directly and specially affected by the changes and amendments. Any petitions against these changes and amendments will be heard by the High Speed Rail (London - West Midlands) Select Committee ('the Select Committee') in due course.



This sketch illustrates how the completed station could appear. The sketch is for illustrative purposes and demonstrates the possible regeneration opportunities at Euston, including future potential over site development.

1.3 Terminology used to describe the HS2 scheme

In order to differentiate between the original scheme assessed in the main ES and subsequent changes, the terms in Table 1 are used throughout the SES2 and the AP3 ES.

The following terms are also used to differentiate between design changes included in the SES2 and those included in the AP3 ES:

- 'SES2 design changes' - changes to the scheme reported in the SES2 that do not require amendments to the Bill; and
- 'AP3 amendments' - changes to the scheme reported in the AP3 ES that require amendments to the Bill.

Table 1: Scheme definitions

Scheme name	Definition	Relevant CFAs
the original scheme	the Bill scheme submitted to Parliament in November 2013, which was assessed in the main ES	1 to 26
the AP1 revised scheme	the original scheme as amended by the AP submitted in September 2014	7 to 26
the SES scheme	the original scheme with the design changes described in the SES submitted in July 2015	4 to 26
the AP2 revised scheme	the SES scheme as amended by the AP2 submitted in July 2015	4 to 26
the SES2 scheme	the original scheme as updated by the SES scheme, with the design changes described in the SES2 submitted in September 2015	1 to 5
the AP3 revised scheme	the SES2 scheme as amended by the AP3 submitted in September 2015	1 to 5

1.4 The SES2 and the AP3 ES

Supplementary Environmental Statement 2

The CFA1 report presents a complete assessment of the revised scheme within the Euston station and approach area and provides a summary of key changes to the assessment of the original scheme reported in the main ES. As the AP3 amendments within CFA1 are relatively minor and form part of the revised scheme, these are included in the assessment, along with the SES2 changes.

For CFAs 2 to 5, the SES2 presents an assessment of design changes that do not require an amendment to the Bill, and that result in new or different likely significant environmental effects. In some cases, SES2 changes are also included where they do not result in new or different likely significant environmental effects.

The SES2 reports any new or different likely significant environmental effects resulting from:

- updated and new environmental baseline information;
 - ecology: surveys for bats, black redstart and desk based research regarding the hedgehog population at Regent's Park; and
 - traffic and transport: updates to traffic models and traffic surveys of roads in the vicinity of Euston station; and
- design changes that can be made without further amendments to the Bill, including:
 - a revised design for the Euston station and approach area in CFA1:

The revised scheme will include a subsurface high speed station, with a ground-level concourse. The high speed station will be constructed in two stages (as opposed to the single construction stage proposed as part of the original scheme). Construction Stage A will allow HS2 Phase One to become operational in 2026 through the provision of six high speed platforms. Construction Stage B1 will provide an additional five platforms for long-term capacity and HS2 Phase Two services by 2033.

The design and staged construction programme of the revised scheme has been planned to minimise disruption to the operation of the conventional station, but

also to be compatible with the potential future redevelopment of the conventional station. Any such development would be for Network Rail to progress outside of the Bill powers (this potential future construction stage has been described as Stage B2, which is not covered in this ES). At least 16 platforms in the existing conventional station will be retained until 2026 (rather than the 13 proposed in the original scheme) to meet train operating companies' requirements, while the first six high speed platforms are under construction.

After 2026, the conventional station will be reduced to a minimum of 11 platforms to allow for the construction of five additional high speed platforms by 2033. The additional capacity for travel to and from the West Midlands will be provided by the six high speed platforms, operational by this stage. On completion in 2033, there will be a minimum of 11 conventional platforms and 11 high speed platforms.

Upon completion, the revised scheme includes improvements to the public realm in Euston Square Gardens and will facilitate improved connectivity for pedestrians moving through the area. As with the original scheme, open space will be lost during the construction period. However

the intended replacement open space provided in the revised scheme will be an improvement over that proposed in the original scheme.

The revised design of Euston station and approach will also be compatible with future development of the conventional station and will enable OSD to be undertaken above the station and the approach to the north of the station;

- removal of the proposed section of the HS1-HS2 Link (proposed as part of the original scheme) and all associated construction works within CFAs 2 and 3;
- changes to construction assumptions from those in the main ES, the SES and the AP2 ES, where relevant:
 - changes to the use of the HS1-HS2 Link portal main construction compound in CFA3, which was to be used to facilitate the construction of the link. Although the link will no longer be required, the construction compound (now renamed as the Juniper Crescent satellite construction compound) will still be required to facilitate railway reconfiguration works;
 - use of Euro VI (engines certified to have substantially lower emissions of NO_x (nitrogen oxides) and particulate matter

than older engines) heavy goods vehicles (HGVs) to transport excavated material in CFAs 1 to 3: the main ES assumed that HGVs with any Euro standard engine could be used to transport excavated material; and

- change in the use and duration of the operation of the Willesden F-Sidings satellite construction compound in CFA5; the compound will be used periodically for 17 years, instead of nine years, as reported in the main ES and;

- corrections to the main ES.

The SES2 also reports the following, that may not result in any new or different likely significant environmental effects:

- a change in construction assumption that does not result in a new or different significant effect, but will considerably increase the duration of the operation of the Willesden Euroterminal main construction compound in CFA4;
- the full set of ecology survey results for CFAs 1 to 3 to complete a commitment made to the Select Committee to publish all ecology surveys undertaken up to the end of 2014; and
- corrections to factual inaccuracies identified in the main ES where they relate to a significant environmental effect.

Additional Provision 3 Environmental Statement

The AP3 amendments to CFAs 1 to 3 include:

- a number of relatively minor amendments within CFA1:
 - additional land for construction off Stephenson Way (to allow oversailing by cranes);
 - additional land for diversion of utilities at Stanhope Street;
 - additional land at Barnby Street for improvements to open space within the Amptill Estate;
 - additional land for highway works at Hampstead Road and Harrington Square;
 - additional land for the installation of ground anchors at Park Village East, north of Mornington Street Bridge;
 - additional land for the extension to the lorry holding area and replacement parking in Regent's Park;
 - extension of a cycle track along Cobourg Street;
 - provision of an access road and ramp to the high speed station basement from Hampstead Road Bridge;
 - provision of a taxi road and cycle track at the northern station entrance from Hampstead Road;

- provision of a loop road for a bus stand and staff welfare facilities off Eversholt Street;
- the provision of a bridge across the railway for temporary utility diversions, south of Hampstead Road Bridge;
- addition of the Grade II listed Euston Lodges and associated structures to Schedule 17 of the Bill; and
- reinstatement of Line X (an existing dive under located on the approach to Euston station that allows trains to cross from one side of the station to the other);
- temporary access rights for a section of Juniper Crescent in CFA2 to enable construction vehicles to access the Juniper Crescent satellite construction compound;
- additional land required in Alexandra Place in CFA3 during construction to create a turning circle for vehicles; and
- addition of Alexandra Road Estate concrete ramp and planter in CFA3 to Schedule 17 of the Bill.

1.5 Structure of the SES2 and the AP3 ES

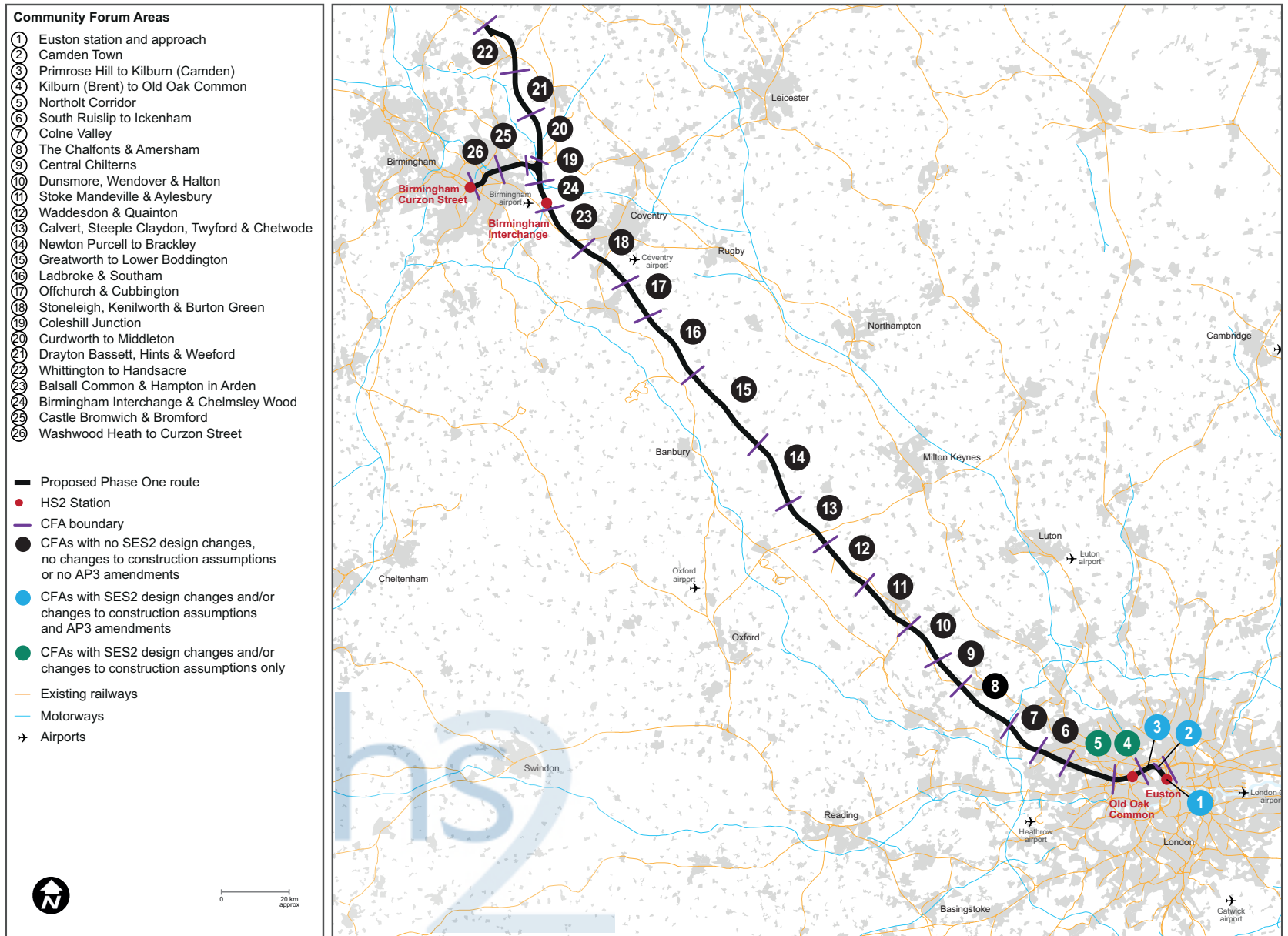
The SES2 and the AP3 ES are separate documents. However, they are bound together and presented in a number of volumes. Each volume generally contains an introduction section and separate SES2 and AP3 ES sections, presented as Part 1 and Part 2 respectively. The introductory sections in each volume apply to both the SES2 (Part 1) and the AP3 ES (Part 2) sections. The SES2 and the AP3 ES comprise:

- NTS: provides a summary in non-technical language of the SES2 (Part 1) and the AP3 ES (Part 2). It presents a summary of any likely residual significant environmental effects (i.e. effects which are likely to remain after mitigation measures are put in place), both beneficial and adverse, which are new or different to those reported in the previous ESs;
- Volume 1: introduction to the SES2 and the AP3 ES. This introduces the supplementary environmental information and design changes included within the SES2 and amendments within the AP3 ES. It also explains changes to the scope, methodology,

assumptions and limitations within the EIA and approach to consultation;

- Volume 2: CFA reports for CFAs 1 to 5 and associated map books. It should be noted that the structures of the CFA reports within Volume 2 vary as follows:
 - CFA1 is split into two parts. Part 1 comprises the SES2 for the Euston station and approach area. Part 2 describes the amendments within the AP3 ES, which have resulted in the need to amend the Bill. Part 1 is further split into Part 1A and Part 1B. Part 1A provides a summary of: new environmental baseline information; a description of the revised scheme for the Euston station and approach area including a comparison with the original scheme described in the main ES; and a summary of the key changes to the likely residual significant effects arising from the revised scheme for Euston compared to the original scheme. Part 1B provides a complete assessment of the revised scheme for the Euston station and approach area, including the effects of a number of minor design changes that require amendments to the Bill. Part 1B replaces the Volume 2 CFA1 report of the main ES;

Figure 1: Phase One route showing the community forum areas with and without AP3 amendments and SES2 changes to the design and to construction assumptions



- CFAs 2 and 3 report any new or different likely significant environmental effects arising from the SES2 changes and AP3 amendments compared to those reported in the main ES;
- CFAs 4 and 5 report any new or different significant environmental effects arising from the SES2 changes compared to the main ES as updated by the SES submitted in July 2015 and taking into account any relevant AP2 amendments assessed in the AP2 ES submitted in July 2015.
- Volume 3: route-wide effects. This describes any new or different route-wide environmental effects arising from supplementary environmental information and design changes included within the SES2 (Part 1) and amendments within the AP3 ES (Part 2), compared to those reported in the main ES as updated by the SES. The AP2 amendments are also taken into account where relevant;
- Volume 5: appendices and map books. This contains supporting environmental information and associated maps; and
- glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations not explained in the main ES.

In the main ES and the AP2 ES, Volume 4 presented an assessment of the likely significant environmental effects that will occur in locations away from the route. None of the SES2 design changes or AP3 amendments relate to or generate likely significant effects in off-route areas (i.e. outside the CFAs). Volume 4 is therefore not included within the SES2 and the AP3 ES.

Figure 1 shows the CFAs along the Phase One route, highlighting which have SES2 changes and/or AP3 amendments.

1.6 Approach to mitigation associated with the SES2 and the AP3 ES

The 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, including the NTS, and the draft Code of Construction Practice, which sets out measures to manage and control the effects of construction. These were provided to Parliament at the same time as the Bill was deposited in November 2013. The mitigation measures described in the main ES also apply to the SES2 and AP3 ES. Site-specific mitigation measures are described within volumes 2 and 3 of the SES2 and the AP3 ES, where required.

1.7 Consultation on the SES2 and the AP3 ES

A formal public consultation on both the SES2 and the AP3 ES is required by Parliamentary Standing Orders. Consultees will have 42 days to respond to the consultation following the deposit of the SES2 and the AP3 ES in Parliament and the first publication of the necessary newspaper notices that follow. Parliamentary officials have

appointed an independent assessor who will summarise consultation responses and provide a report to Parliament before the Third Reading of the Bill.

There will also be a separate petitioning period. This period will provide an opportunity for individuals or organisations specially and directly affected by the changes in the SES2 and amendments in the AP3 ES to petition Parliament on the changes in the SES2 or the AP3 amendments to the Bill.

More information on who may petition against the Bill, and how to do so, is available on Parliament's website (<http://www.parliament.uk>).

1.8 Assessment approach

Scope of the assessment

A scoping exercise was undertaken by environmental technical specialists to determine whether or not the SES2 changes and the AP3 amendments were considered to have the potential to give rise to new or different likely significant environmental effects. The scoping exercise considered the construction and operational effects of the scheme for the following environmental topics:

- agriculture, forestry and soils;
- air quality;
- climate (assessed at a route-wide level, rather than at the local CFA level);
- community;
- cultural heritage;
- ecology;
- electromagnetic interference (refer to the SES2 and the AP3 ES Volume 5: appendices);
- land quality;
- landscape and visual assessment;
- socio-economics;
- sound, noise and vibration;
- traffic and transport;
- waste and material resources (assessed at a route-wide level, rather than at the local CFA level); and
- water resources and flood risk assessment.

Those SES2 changes and AP3 amendments identified as having the potential to result in new or different likely significant environmental effects were subject to further assessment work.

Assessment methodology

The EIA process for the SES2 and the AP3 ES has followed that which was used for the main ES, as described in the Scope and Methodology Report (SMR), and the first SMR Addendum. Refinements were made to the EIA process at the time of the AP1 ES, the SES and the AP2 ES as described in those documents. There have also been refinements to the methodology for air quality and ecology assessment used in the SES2 and AP3 ES.

There has also been a minor traffic update to address the assessment of the combined construction and operation stage

Air quality

In order to reduce the impact on local air quality in areas where there is action in place to meet European Union (EU) limit values through the introduction of low emission zones (such as the London Low Emission Zone), HS2 Ltd will require HGVs entering these designated zones during construction, for the purposes of transporting excavated material, to be powered by Euro VI (or lower emission) engines. The use of these vehicles has been assumed in the air quality assessment of the transport modelling output in CFAs 1 to 3 (including the modelling that takes account of the updated TfL Central London

Highway Assignment Model (CLoHAM) model). This approach was taken previously in the assessments for CFAs 4 to 6 in the SES and the AP2 ES.

Since submission of the Bill, two guidance documents which informed the methodology used in the main ES have been updated:

- Institute of Air Quality Management (IAQM) has issued new guidance on assessing the impact of dust emissions during construction. This guidance was taken into account in the assessments for CFAs 4 to 6 in the SES and the AP2 ES; and
- IAQM and Environmental Protection UK (EPUK) have issued new guidance (2015) on the consideration of air quality within the land use planning and development control process. This guidance makes changes from the previous 2010 EPUK guidance in the process of determining the impact descriptors at each receptor.

The impact descriptors of the new IAQM/EPUK guidance have been applied to the air quality assessment in the SES2 and AP3 ES. Use of the new impact descriptors generally results in a larger number of receptors being reported as experiencing a significant effect. This is because with the same predicted change in pollutant

concentration at a receptor, the new guidance is more likely to result in an impact being described as 'moderate' or 'substantial' compared with the use of the previous version of the guidance.

The updated guidance from IAQM and IAQM/EPUK is taken account of in a third SMR addendum for air quality included as part of this SES2 and AP3 ES (Volume 5, CT-001-000/4).

Ecology

HS2 Ltd continues to make efforts to collect supplementary ecological baseline data. Survey work undertaken during 2015 has been conducted according to the technical methods set out in the Ecology Technical Note: Field Survey Methods and Standards. However the survey extents in 2015 have been refined and greater emphasis has been placed on targeting survey work at those locations where it is known, or it is likely that, adverse impacts arising from the construction and operation of the scheme will occur.

Part 1: Supplementary Environmental Statement 2

2. Introduction to the Supplementary Environmental Statement 2

This part of the NTS provides a summary of the SES2. It also reports whether the updates and design changes reported within the SES2 result in new or different likely significant residual environmental effects from those reported in previous ESs for CFAs 1 to 5, and at a route-wide level (Volume 3).

The SES2 provides additional information to that provided within the main ES and, where relevant, the SES and the AP2 ES.

The remainder of Part 1 of this NTS is comprised of the following sections:

- Section 3: updated and new environmental baseline information: provides a brief introduction, outlining which environmental topics are affected and the reasons the baseline is being updated;
- Section 4: changes to the design and construction assumptions that do not require amendments to the Bill: provides a summary list of the changes to the design and construction assumptions that do not require amendments to the Bill which result in new or different significant effects or

which are included in order to adequately describe features of the scheme;

- Section 5: corrections to the main ES; and
- Section 6: summary of residual environmental effects of the SES2 changes.

3. Updated and new environmental baseline information

Environmental baseline surveys for the scheme have continued to be undertaken since the production of the main ES. Despite the efforts of HS2 Ltd to undertake comprehensive surveys on the land affected by the scheme in advance of Bill deposit in 2013, access to some sites was denied or became available too late to be incorporated into the main ES. A precautionary assessment was therefore undertaken for the main ES, based on environmental information gathered from desk-based research, information provided by third parties, and professional judgement.

Since the production of the main ES, additional access has been granted and further surveys have been undertaken. For ecology, these additional survey results were published in the SES for CFAs 4 to 26, regardless of whether or not they resulted in new or different significant environmental effects (due to the commitment made by the Select Committee). For all other topics, the survey results were published only where they resulted in new or different significant effects.

For the SES2, new areas of land have also been identified and surveyed and additional baseline information has become available for some environmental topics. These surveys and

additional desk-based information address the following environmental topics:

- ecology: surveys for bats, black redstart and desk-based research regarding the hedgehog population at Regent's Park; and
- traffic and transport: updates to traffic models and traffic surveys of roads in the vicinity of Euston station, and pedestrian counts at the station in June 2014.

Further information on updated/new environmental baseline information can be found within the SES2 and the AP3 ES Volume 2 CFA reports.

The SES2 generally only reports new baseline information where it is relevant to the assessment of a new or different likely significant environmental effect. The exception is for ecology where, to fulfil a commitment made to the Select Committee, the full set of results from further ecology surveys undertaken up to the end of 2014 for CFAs 1 to 3 has been published, namely additional surveys for bats and black redstart.

HS2 Ltd continues to make efforts to collect supplementary ecological baseline data. Where 2015 data is available this has been drawn on to

support the assessments. Within CFAs 1 to 5 the scope of the surveys being undertaken includes: Phase 1 habitat survey, amphibians, otter, water vole, reptiles, and bats and birds.

The SES2 also includes updates to the traffic and transport baseline information. Since submission of the main ES, TfL has updated their Railplan and CLOHAM models. CLOHAM and Railplan were used in the assessment for CFAs 1 to 4. An updated West London Highway Assignment Model (WeLHAM) was also used in the assessment for CFAs 4 and 5. These model updates have incorporated new baseline data, background growth assumptions and committed transport schemes. In particular, Railplan now includes significantly higher rates of underlying growth in rail passenger demand than that used in the main ES, while CLOHAM and WeLHAM incorporate the latest committed highway improvement schemes. The updates to these models have been taken into account in the assessments within the SES2 and AP3 ES for CFAs 1 to 5.

4. Changes to the design and to construction assumptions that do not require amendments to the Bill

4.1 Introduction

Some of the changes to the design and to construction assumptions do not require amendments to the Bill. As the scale of the design changes in CFA1 are substantial, a new assessment has been undertaken and therefore the design changes that do not require amendments to the Bill are reported whether or not they result in new or different likely significant environmental effects.

Design changes that do not require amendments to the Bill within CFAs 2 and 3 are only reported where they result in new or different likely significant environmental effects from those reported in the main ES.

Changes to construction assumptions are also reported in the relevant Volume 2 CFA reports.

4.2 Summary of changes to the design and construction assumptions that do not require amendments to the Bill

Tables 2-4 present a summary of the changes to the design and construction assumptions for each of the CFAs, providing a description of the original scheme and the SES2 scheme.

Figures 2-4 show the approximate location of the SES2 design changes within each of the CFAs. The legend is common to each figure in this section.

Legend	
	SES2 design changes
	Station or depot
	Route in tunnel
	Route on surface
	Community forum area boundary
	Motorway
	Major road
	Existing railway
	Railway stations
	Airport
	Urban area
	Lake / reservoir
	Woodland, park or garden
	Main river / stream
	Local Authority boundary

Figure 2: Approximate location of the SES changes to the design and to construction assumptions for Community Forum Area 1 – Euston station and approach



Table 2: Summary of changes to the design and to construction assumptions within CFA1 - Euston station and approach

Name of design change or construction assumption	Description of the original scheme	Description of the SES2 scheme
<p>Euston station design</p>	<p>The Bill provides for Euston station to be the London terminus of HS2. The existing station would be expanded and remodelled to accommodate high speed train services as well as the existing West Coast Main Line (WCML) and local classic rail services.</p> <p>The construction of the terminus would be delivered in a single construction stage between 2016 and 2026.</p> <p>An additional six platforms would be provided, resulting in a total of 24 platforms with 11 used for high speed services and 13 classic services. The high speed station would accommodate 18 trains per hour operating in and out of the station. All of the platforms would be able to accommodate longer trains. The 13 conventional platforms would provide a similar service as which currently operates.</p> <p>Four of six approach tracks to the conventional station would be retained. Line X, one of the existing approach tracks, would be removed during construction and would not be reinstated.</p> <p>The concourse at street level would be rebuilt with an improved layout to cater for an increased number of passengers including direct subsurface exits to the underground.</p> <p>A new east-west link bridge would be constructed across the railway north of the station. This bridge would provide for pedestrian and cyclist access between Eversholt Street and Hampstead Road.</p> <p>Hampstead Road Bridge would be demolished and rebuilt on its current alignment and would be a truss bridge (a structure of connected elements forming triangular units). Both Mornington Street and Granby Terrace Bridges would be demolished and reconstructed.</p> <p>A taxi rank would be provided on Cobourg Street, to the west of the high speed station.</p> <p>The scheme would provide new open space at the northern end of the Regent’s Park Estate. The main entrance forecourt, the bus station and Euston Square Gardens would be reinstated and improved.</p> <p>Works would be undertaken to facilitate OSD.</p>	<p>As the AP3 amendments within CFA1 are integral to the SES2 revised scheme, they are detailed in this SES2 scheme description, where necessary.</p> <p>The high speed station will be constructed partially in the footprint of the existing conventional station in two stages:</p> <ul style="list-style-type: none"> - construction Stage A will provide six high speed platforms to allow HS2 Phase One to be operational in 2026; and - construction Stage B1 will provide an additional five platforms for long-term capacity and HS2 Phase Two services by 2033. The design will include a subsurface high speed station, with a ground-level concourse. <p>The revised scheme design and construction programme will minimise disruption to the operation of the conventional station, and ensure adequate capacity for the conventional rail services. Sixteen platforms, rather than 13 (as proposed in the original scheme), will be maintained in the conventional station until 2026. The conventional station will be reduced to 11 platforms after 2026, with additional capacity for travel to and from the West Midlands provided by HS2 Phase One services. On completion in 2033, there will be 11 high speed platforms and a minimum of 11 conventional platforms, designed to meet long-term capacity requirements.</p> <p>Up to 14 high speed trains per hour will serve Euston from 2026, and this will increase to 18 high speed trains per hour from 2033.</p> <p>Five of six approach tracks to the conventional station will be retained, including Line X, one of the approach tracks, which will be reinstated after a three year closure during construction Stage A.</p> <p>The revised scheme does not provide for the full redevelopment of the existing conventional station, but is compatible with potential future redevelopment of the conventional station should it be carried out by Network Rail. Any redevelopment of the conventional station would be for Network Rail to progress outside the Bill process.</p> <p>The revised scheme provides a spine building aligned north-south to create a route through the station for pedestrians and passengers, as well as three station entrances offering greater pedestrian permeability.</p> <p>Hampstead Road Bridge will be reconstructed using a beam bridge solution. Both Mornington Street and Granby Terrace Bridges would be demolished and reconstructed.</p> <p>The revised scheme provides for a staged provision of taxi facilities, with a temporary taxi rank on Cobourg Street (2026-33) and permanent taxi rank located at the northern entrance, off Hampstead Road, from 2033 onwards.</p> <p>As with the original scheme, open space is lost during the construction period. However the intended replacement open space provided in the revised scheme will be an improvement over that proposed in the original scheme, including new open space at northern end of Regent’s Park Estate and at the northern entrance.</p> <p>The revised scheme facilitates potential OSD in order to help meet the aspirations of the EAP.</p>

Figure 3: Approximate location of the SES changes to the design and to construction assumptions fo Community Forum Area 2 – Camden Town

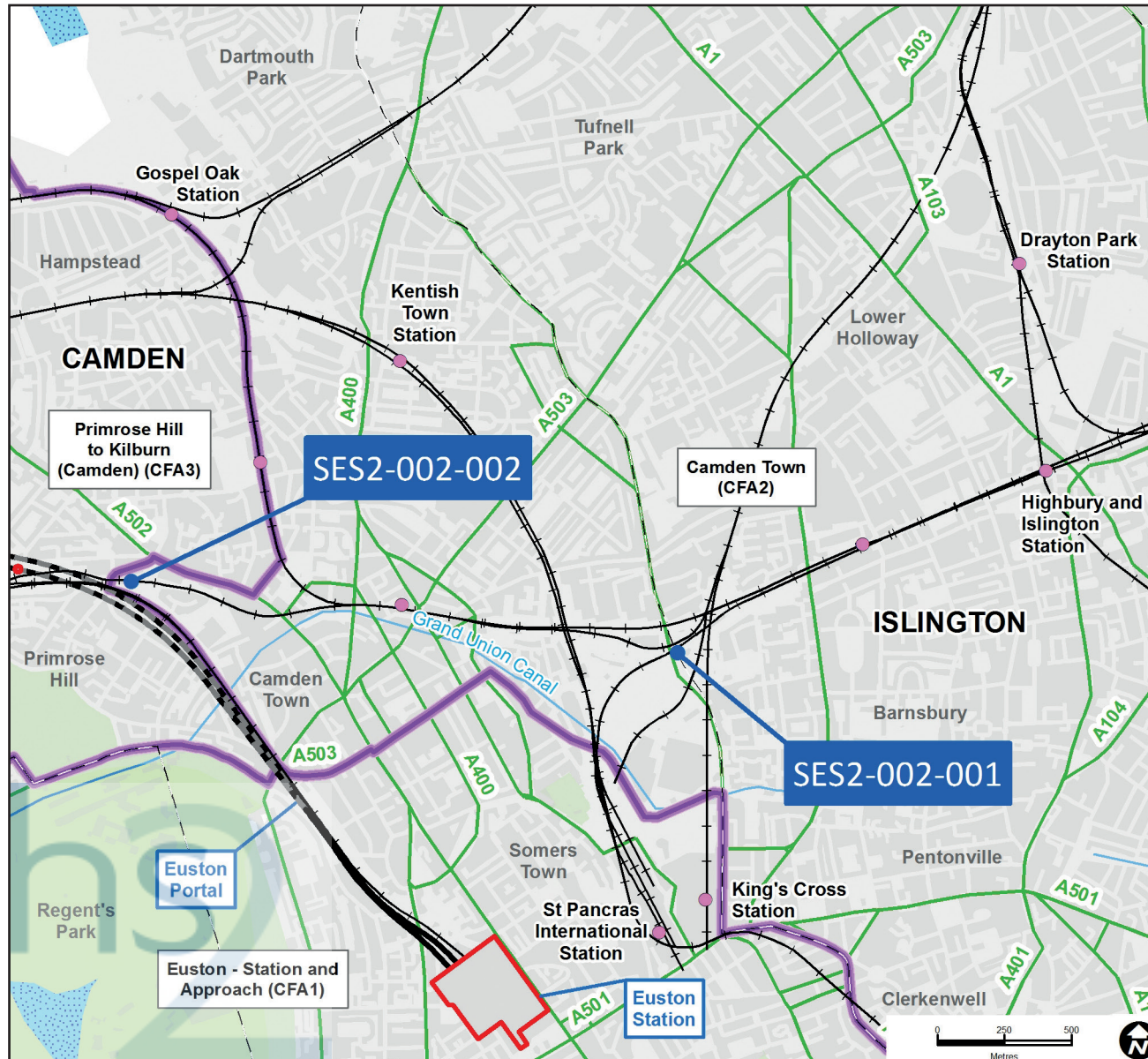


Table 3: Summary of changes to the design and to construction assumptions not requiring a change to the Bill within CFA2 - Camden Town

Name of design change or construction assumption	Description of the original scheme	Description of the SES2 scheme
Removal of the HS1-HS2 Link (SES2-002-001)	The Bill provides for a HS1-HS2 Link to connect HS2 services to the existing HS1.	The SES2 scheme removes the HS1-HS2 Link tunnel and all associated construction works within CFAs 2 and 3.
Amended use of the construction compound at Juniper Crescent (SES2-002-002)	The Bill provides for the HS1-HS2 Link portal main construction compound to be used for the construction of the HS1-HS2 Link tunnel portal and associated infrastructure. It would also provide support for the reconstruction of the Chalk Farm Road Bridge, the viaduct refurbishment eastwards towards Camden Road station and railway installation works and modifications to the existing railway.	Provision for the section of the HS1-HS2 Link within CFAs 2 and 3 has been removed from the Bill (see SES2-002-001). The SES2 scheme will still require the use of the HS1-HS2 Link portal main construction compound, which is now known as the Juniper Crescent satellite construction compound. This construction compound will be used to facilitate the railway reconfiguration works associated with the WCML between Euston station and Primrose Hill.
Use of Euro VI HGVs (SES2-002-003)	The main ES assumed that HGVs with any Euro standard engine could be used to transport excavated material.	HS2 Ltd has decided that any HS2 HGVs entering designated low emission zones during construction, for the purposes of transporting excavated material, will be powered by Euro VI (or lower emission) engines.

Figure 4: Approximate location of the SES changes to the design and to construction assumptions for Community Forum Area 3 – Primrose Hill to Kilburn (Camden)

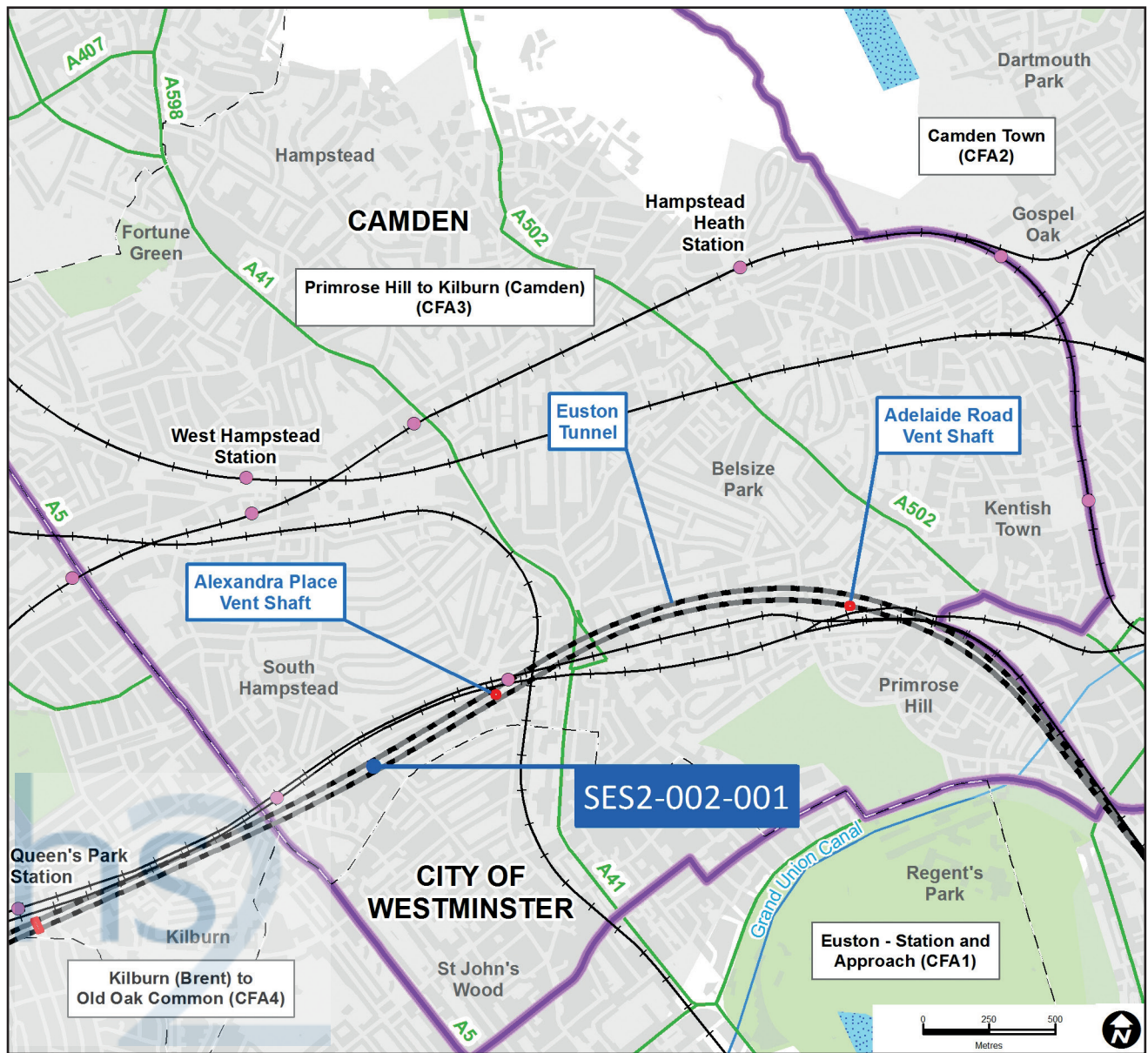


Table 4: Summary of changes to the design and to construction assumptions not requiring a change to the Bill within CFA3 - Primrose Hill to Kilburn (Camden)

Name of design change or construction assumption	Description of the original scheme	Description of the SES2 scheme
Removal of the HS1-HS2 Link (SES2-002-001)	For information on the removal of the HS1-HS2 Link see SES2-002-001 in Table 3.	For information on the HS1-HS2 Link see SES2-002-001 in Table 3.
Use of Euro VI HGVs (SES2-003-001)	The main ES assumed that HGVs with any Euro standard engine could be used to transport excavated material.	HS2 Ltd has decided that any HS2 HGVs entering designated low emission zones during construction, for the purposes of transporting excavated material, will be powered by Euro VI (or lower emission) engines.

5. Corrections to the main ES

A number of corrections from the previous environmental assessment have been identified. These are presented in the SES2. Each correction has been reviewed to determine whether it will potentially lead to new or different likely significant environmental effects from those described in the main ES. Where a correction leads to a new or different likely significant residual effect, it is reported in Section 6 of this NTS.

6. Summary of residual environmental effects of the SES2 changes

6.1 Summary of residual environmental effects

This section presents any likely residual significant effects (effects which remain after mitigation has been put in place) as a result of the construction and operation of the scheme. As the design changes in CFA1 are substantial and the CFA1 report presents an entirely new assessment, no comparisons are made with the significant effects reported in the CFA1 report of the main ES. This section also presents any new or different likely significant effects for CFAs 2 to 5 compared to those reported in previous ESs.

The need for a number of corrections was identified in the assessment of effects in the CFA1 report of the main ES for the following environmental topics: community; sound, noise and vibration; landscape and visual; and traffic and transport. As this summary of effects presents a complete reassessment of the scheme at Euston and does not refer back to the main ES, these corrections are not presented separately here. Further information on these

corrections can be found in the CFA1 report of the SES2 and the AP3 ES.

There are no new or different likely significant route-wide effects as a result of the SES2 scheme.

The significant effects referred to in the remainder of this NTS are residual effects.

CFA1 – Euston station and approach

Air quality

Effects arising during Stage A construction (2017-2026)

Changes in traffic flows, road closures and diversions will result in both beneficial and adverse air quality effects. These will be temporary effects for relatively short periods between 2017 and 2026.

Temporary reductions in NO₂ (nitrogen dioxide) concentrations will result in beneficial air quality effects along Drummond Street, Gordon Street, Granby Terrace, Tavistock Square, Bedford Way, North Gower Street, Mornington Street and Mornington Place.

Temporary increases in NO₂ concentrations will result in adverse air quality effects on the following roads:

- Grays Inn Road, Euston Road, Marylebone Road, and the A5 Edgware Road;
- south of Euston Road: Gower Street, Hallam Street, Whitfield Street, Carlisle Street, Romilly Street, Hollen Street, Woburn Place, Hunter Street; and Judd Street;
- west of Euston station: Aberdeen Place, St John's Wood Road, Regent's Park, Outer Circle, Albany Street, Park Road, Augustus Street, Hampstead Road, Robert Street, Varndell Street, Park Village West, Stanhope Street, North Gower Street (another part of this street will also experience a beneficial effect), and Park Square East;
- east and north-east of Euston station: Eversholt Street, Polygon Street, Phoenix Road, Ossulston Street, and Chalton Street; and
- north of Euston station: Mornington Crescent, Harrington Square, Barnby Street, Parkway, Delancey Street, Prince Albert Road, Bayham Street, and Arlington Road.

Concentrations of PM₁₀ will temporarily reduce on Gordon Street, resulting in a beneficial air quality effect. Temporary increases in PM₁₀ will result in adverse air quality effects along: Dukes Road, Euston Road, Euston Square, Euston Street and Upper Woburn Place.

Effects arising during Stage B1 construction and operation (2026-2033)

Changes in traffic flows, road closures and diversions will result in both beneficial and adverse air quality effects. These will be temporary effects for relatively short periods between 2026 and 2033.

Mainly temporary reductions in NO₂ will result in beneficial effects along Bloomsbury Place, Endsleigh Gardens, Gordon Street, Southampton Row, Russell Square and Tavistock Place.

Mainly temporary increases in NO₂ concentrations will result in adverse effects along Euston Road, Marylebone Road, Upper Woburn Place, Albany Street, Hampstead Road, Euston Street, Gower Street, Grays Inn Road and Eversholt Street.

Whilst the effects are residual (cannot be practicably mitigated), in the future there will be improvements in background air quality brought about by continued reductions in vehicle

emissions which are expected to reduce NO₂ concentrations beyond 2026.

Effects arising during operation (2033 onwards)

There will be fewer locations, if any, experiencing significant air quality effects during operation, than predicted for construction Stage B1 and operation (as Stage B1 will also include construction activities which will cause most of the air quality effects).

Community

Effects arising during Stage A construction (2017-2026)

There will be a major adverse effect due to the demolition of 220 residential properties, including 168 owned by the LBC. Replacement social housing will help, in part, offset this effect. Neighbouring residents not affected will experience a change in amenity. The demolition of University College London premises at Wolfson House will result in a major adverse effect.

Hampstead Road Open Space, Eskdale play area and St James's Gardens will be required permanently resulting in major adverse effects. The facilities will be reprovided following construction in the proposed open space north of Langdale.

As part of the construction of the scheme, Old Tenants Hall, which is used for the Silverdale Motorcycle Project, will be demolished. Although a replacement hall will be reprovided, the motorcycle project will not, resulting in a major adverse significant effect.

To the west of the existing Euston station, the construction of the scheme will result in the demolition of residential properties on Cobourg Street, Euston Street and Melton Street. During construction, there will be amenity effects (as a result of a combination of some or all of the following: increased HGV movements, noise, air quality effects) on residents at properties on: the corner of Cobourg Street and Starcross Street (major adverse); Varndell Street (major adverse), Robert Street (moderate adverse) and users of the dental practice on Robert Street (moderate adverse).

Euston Square Gardens will be required during the construction period, although some of the existing mature trees will be retained and the gardens will be reinstated after construction is completed in 2033. The playground adjacent to Lancing Street will be required during construction, resulting in a major adverse effect. Subject to agreement with LBC,

HS2 Ltd proposes to relocate the playground equipment to an adjacent area of land.

To the south and west of Euston Road, there will be major amenity effects (as a result of a combination of some or all of the following: increased HGV movements, noise, air quality effects) on residents along several roads, including parts of: A4201 Albany Street (including Christ Church Primary School); A501 Euston Road; A41 Baker Street; and A41 Park Road (including Francis Holland School); Bidborough Street; Mabledon Place; Cartwright Gardens; A400 Gower Street/Bloomsbury Street; Grafton Way and Coram Street.

To the north of Euston station, residents at Park Village East are predicted to experience major adverse temporary isolation (due to access restrictions) and amenity effects (due to noise and visual effects). There will be temporary major adverse amenity effects (due to a combination of some or all of the following: HGV movements, noise and air quality effects) on residents at Mornington Terrace, Mornington Crescent, Mornington Place, Mornington Street, Albert Street, Plender Street, Parkway and Delancey Street (including North Bridge House Preparatory School).

To the east of Euston station, residential properties on the Ampthill Estate will also experience major adverse amenity effects during construction as a result of construction noise, air quality and visual effects.

HS2 Ltd will continue to work with the schools and LBC to identify reasonably practicable measures to mitigate the significant amenity effects identified.

Effects arising during Stage B1 construction and operation (2026-2033)

Despite the provision of vehicle safety barriers that will act as noise barriers, 50 to 60 residential properties at Coniston, Langdale and Augustus House on the Regent's Park Estate will experience major adverse amenity effects, due to a combination of noise and visual effects arising from Stage B1 construction and operation of the revised scheme.

As with construction Stage A, Euston Square Gardens will also be required during construction Stage B1 and this will continue to be a significant effect.

Cultural heritage

Effects arising during Stage A construction (2017-2026)

Construction of the scheme will result in major adverse effects due to the permanent loss of a number of assets including: St James's Gardens (containing the post-medieval St James's burial ground and chapel), and the Grade II listed 14-15 Melton Street.

Moderate adverse effects will occur due to the loss of a number of assets including: Mornington Street Bridge, Granby Terrace carriage shed and One Euston Square.

The scheme will alter the setting of several built heritage assets around Euston resulting in significant effects, including temporarily: the Grade II* listed buildings in Park Village East during construction (major adverse), and permanently: the Grade II* listed 1-9 Melton Street (major adverse), the Grade II* listed war memorial in Euston Square Gardens (major adverse) and the Grade II listed Mornington Street Bridge piers and lamp stands, west and east ends (moderate adverse) (which will be relocated).

Effects arising during Stage B1 construction and operation (2026-2033)

Construction Stage B1 will result in further temporary moderate adverse effects on the setting of the Grade II* listed 1-9 Melton Street and Euston Square Gardens.

The Grade II listed railings at Euston Square Gardens will be partly removed during construction and the underpass associated with the Grade II listed Euston Lodges will be affected, resulting in a moderate adverse effect.

There will be a permanent moderate adverse effect on the setting of the Grade II* listed War Memorial and associated lamp posts.

Land quality

Effects arising during Stage A construction (2017-2026)

Any necessary remediation of a former printing works, chemical works and other previous potentially contaminative land uses abutting the north of St James's Gardens, where these are impacted by the scheme is likely to result in a significant beneficial land quality effect.

Landscape and visual assessment

Effects arising during Stage A construction (2017-2026)

Construction of the scheme will result in major adverse effects on the Euston Road Commercial Area Landscape Character Area (LCA) and the Euston West Post-War Residential LCA, and a moderate adverse effect on the Regent's Park Georgian Residential LCA.

Construction of the scheme will result in major adverse effects at a number of viewpoints, including: views looking north and east from Cobourg Street, view east from Hampstead Road, near the Tarns and Rydal Water apartment blocks; and views looking north-east from Langdale residential block and Augustus House. There will also be moderate adverse effects on views, including: views north and north-east from Staveley and Waterhead residential blocks on Varndell Street; views east from 1 to 9 Melton Street; and views north-west from Euston Fire Station.

Effects arising during Stage B1 construction and operation (2026-2033)

Construction Stage B1 will result in a major adverse effect on the Euston Road Commercial

Area LCA and a moderate adverse effect on the Euston West Post-War Residential LCA.

Construction of the scheme will result in major adverse effects at a number of viewpoints, including: views north and east from Cobourg Street; views east from Hampstead Road, near The Tarns and Rydal Water residential blocks; and views east from 106-108 Hampstead Road.

Views of construction of the scheme will result in moderate adverse effects at a number of viewpoints, including: views east from 1-9 Melton Street; views north from Friends House Gardens and offices in adjacent buildings; and views west from the Travelodge hotel.

Effects arising during operation (2033 onwards)

Operation of the scheme will result in a moderate adverse effect on the Euston Road Commercial Area LCA.

Operation of the scheme will result in major adverse effects at a number of viewpoints, including: views north and east from Cobourg Street; views east from Hampstead Road, near The Tarns and Rydal Water residential blocks; and views east from the front of Cartmel, Coniston and Newlands residential blocks.

Operation of the scheme will result in moderate adverse effects at a number of viewpoints, including: views north from the corner of Euston Road and Gordon Street; and views east from the Wesley Hotel.

Socio-economics

Effects arising during Stage A construction (2017-2026)

Construction of the scheme will require the demolition of retail premises within Euston station, the Ibis Hotel Euston, the Thistle Euston Hotel and Wolfson House, resulting in major adverse effects. The demolition of the Royal Mail delivery office at 1 Barnby Street, offices at 132-140 Hampstead Road, The Cottage Hotel and 93-103 Drummond Street will result in moderate adverse effects. Businesses displaced by the scheme will be fully compensated within the provisions of the National Compensation Code. HS2 Ltd will provide support over and above statutory requirements to help businesses find suitable alternative locations.

In addition, the Exmouth Arms public house on Starcross Street and the Wesley Hotel on Euston street may experience amenity effects (as a result of a combination of noise and visual effects).

Although jobs will be displaced or lost during construction, construction jobs will be created, which will be accessible to local people and will benefit local businesses due to construction workers spending money locally.

Effects arising during Stage B1 construction and operation (2026 and 2033)

Construction of the high speed station during Stage B1 will require the demolition of retail premises within the existing conventional Euston station, resulting in a major adverse effect. Businesses displaced by the scheme will be fully compensated within the provisions of the National Compensation Code. HS2 Ltd will provide support over and above statutory requirements to help businesses find suitable alternative locations.

The construction employment benefits reported under construction Stage A will continue during this period. In addition, the scheme will increase the amount of retail floorspace available in the area.

Operational employment will be created at locations along the route, including at Euston station.

The scheme will also contribute to the creation of wider development opportunities (including OSD) in the Euston area. The operation of the scheme could encourage indirect employment opportunities for local businesses supplying HS2 and businesses in the newly created retail floorspace and future OSD and also from staff spending.

Effects arising during operation (2033 onwards)

The operational and business employment effects described for operation in construction Stage B1 and operation will continue after 2033, and are permanent.

Sound, noise and vibration

Construction effects arising during Stage A construction and Stage B1 construction and operation (2017-2033)

A number of residential properties in the Park Village East area, the Mornington Terrace area, Amptill Estate, the Cobourg Street area and the Regents Park Estate area are estimated to qualify for noise insulation. The noise insulation will reduce noise inside these properties to a level where it would not significantly affect residents.

Construction of the scheme will result in significant temporary noise and vibration effects on a number of residential properties at Mornington Terrace, Gillfoot in Ampthill Estate, Cobourg Street, Euston Street, and Cartmell on Hampstead Road.

Despite measures to reduce noise and vibration impacts on residential communities, there will be significant effects on the following residential areas during construction: Park Village East; Mornington Terrace and parts of Mornington Place and Crescent; Ampthill Estate; Cobourg Street; and Regent's Park Estate including Cartmel, Coniston and Langdale, and the proposed Rydal Water and Newlands residential blocks.

Construction noise will result in adverse effects on a number of non-residential properties, including: Park Village Studio on Park Village East; the Maverick TV Studio on Churchway; offices in Cobourg Street; the Exmouth Arms Public House in Starcross Street; the Euston Mosque in Starcross Street; the NHS Centre and Maria Fidelis Convent School in North Gower Street; the Regents Park Children's Centre nursery in Augustus Street; the School of Arts on Euston Road; the Royal College of General

Practitioners offices in Melton Street; the Surma Community Centre on Robert Street; offices facing on to Stephenson Way; the Magic Circle, Royal Asiatic Society and offices in Stephenson Way facing onto Regnart Buildings; the Wesley Hotel on Euston Street; shops and commercial properties in Drummond Street and Euston Street; commercial space on the ground floor of the proposed Rydal Water and Newlands replacement housing buildings on Hampstead Road; and The York and Albany Hotel on Parkway. It is likely that further on-site mitigation measures, will reduce these direct effects.

Increases in road traffic on Robert Street, Albert Street north of Mornington Street, Bidborough Street, Cartright Gardens, Granby Terrace, Varndell Street, Mornington Crescent and Mornington Place are likely to cause adverse noise effects on adjacent residential and non-residential properties.

HS2 Ltd will continue to seek practicable measures to further reduce or avoid these effects.

Operational effects arising during Stage B1 construction and operation (2026-2033) and operation (2033 onwards)

Cartmel, a residential building, would experience noise effects and is estimated to qualify for noise insulation. The noise insulation will reduce noise inside the building to a level where it would not significantly affect residents.

Operation of the scheme will result in adverse noise effects at the Regent's Park Estate community in the vicinity of Langdale, Augustus House, Coniston and Cubitt Court (including their adjacent open areas). Increases in road traffic associated with operation of the scheme will result in adverse noise effects in part of Cobourg Street and part of Euston Street.

HS2 Ltd will continue to seek practicable measures to further reduce or avoid the adverse effects.

Reduced traffic noise as a result of road closures is likely to create beneficial noise effects along Cardigan Street.

Traffic and transport

Effects arising during Stage A construction (2017-2026)

Construction activities associated with the works at Euston will lead to public transport delays due to the need for interventions on the existing rail network (route-wide) and potentially cancellation of some services. Individually these are not considered significant, however, cumulatively they will result in a moderate adverse effect.

Changes in traffic flows will result from construction traffic, local road closures and relocation of taxi operations. This will cause increased difficulty for pedestrians crossing the road, resulting in adverse effects. Increases in traffic flows will mainly be concentrated on some roads to the east of Euston in the Somers Town and King's Cross area, particularly around the A4200 Eversholt Street; on the A501 Euston Road between Gordon Street and King's Cross; to the south in the Bloomsbury area resulting from the closure of Gordon Street particularly A400 Gower Street and B504 Judd Street; in the Regent's Park and Camden Town areas on roads around A4201 Parkway and on the A41 and other construction lorry routes.

Reductions in traffic flow due to traffic diversions are expected and will result in improvements for pedestrians crossing the road. This will result in significant beneficial effects for pedestrians on a number of roads. The effects will mainly be concentrated on roads to the south of Gordon Street in the Bloomsbury area, in particular, on Gordon Street (moderate/major beneficial), Gordon Square (moderate/major beneficial), Woburn Place (major beneficial) and Southampton Row (moderate beneficial); to the immediate west of the conventional station as a result of the closure of Cardington Street and in the Regent's Park Estate to the north-west of the conventional station.

Effects on parking and loading facilities arising from construction of the revised scheme in Stage A are identified at the following locations: Robert Street (moderate adverse); Stanhope Street (moderate adverse); Mackworth Street (moderate adverse); Varndell Street (moderate adverse); Harrington Street (moderate adverse); Park Village East (major adverse); Mornington Terrace (major adverse); A400 Hampstead Road (major adverse); Starcross Street (moderate adverse); Lancing Street (moderate adverse); A4200 Eversholt Street (major adverse); Drummond Crescent

(moderate adverse) and the Amptill Estate (major adverse).

The following bus routes will experience moderate adverse effects: 10 (eastbound), 24 (northbound), 29 (northbound), 73 (northbound), 134 (northbound), 390 (northbound), 14 (northbound). Bus route C19 (westbound) will experience a minor adverse effect. However, these effects can be mitigated by adaptive signal control. Works will also require the relocation or removal of the bus stops on A400 Hampstead Road.

Works at Euston underground station will require the temporary closure (3 to 5 months in duration) of the southbound Northern line (Bank branch) platform and the Victoria line and Northern line (Bank branch) northbound platforms, resulting in a moderate adverse effect on passengers.

Construction activities will result in disruption to passengers at Euston station as a result of relocation of the station taxi facilities (resulting in a minor adverse effect when the taxi facilities are relocated to Euston Square Gardens, then a moderate adverse effect when they are then relocated to the A4200 Eversholt Street).

Permanent and/or long-period road closures will increase journey distances for pedestrians. This will result in minor adverse effects at: Varndell Street; Cardington Street; Melton Street; Drummond Street; Cobourg Street; Euston Street; Starcross Street and Stephenson Way. This will also result in a major adverse effect at Granby Terrace Bridge.

These closures will also result in significant adverse effects on cyclists at: Melton Street (moderate adverse), Cardington Street (moderate adverse) and Granby Terrace Bridge (minor adverse).

As a result of increases in traffic flows on major roads and certain junctions there will be a minor adverse effect as a result of an increase in accident and safety risks at Regent's Park, Outer Circle.

Effects arising during construction Stage B1 (2026 - 2033) and operation (2026)

There will be beneficial effects due to the opening of the first six high speed platforms at the end of 2026 as a result of improved journey times on HS2 to the Midlands and beyond (major beneficial); lower crowding levels (major beneficial) on trains to and from

the conventional station as a result of increases in train frequencies and released capacity on other rail services easing pressure on the WCML (major beneficial) with resultant reliability benefits.

Following the opening of the first six high speed platforms at the end of 2026, additional demand on the LU network at Euston station will lead to increased levels of crowding, increasing journey times for commuters.

The opening of the first six high speed platforms at the end of 2026 will provide benefits at stations and interchanges associated with the transfer to Euston station of passengers of long-distance services who previously would have arrived at King's Cross and St Pancras International from the north of England resulting in some relief to these stations. There will be improvements in accessibility in the new high speed station concourses; improved platform access as a result of improvements to Euston underground station and the provision of new escalators (major beneficial) and step-free access to the underground, Victoria and Northern (Bank branch) lines (moderate beneficial); improved facilities and access to Euston Square underground station as a result of the provision

of a new Gordon Street underground station entrance and subway connection (major beneficial) and increasing capacity for bus routes as a result of the additional bus stands off A4200 Eversholt Street.

Works at Euston underground station will require the temporary simultaneous closure of the northbound and southbound Northern line (Charing Cross branch) platforms for a three month period in early 2032. This will result in a moderate adverse effect on passengers.

On completion of construction Stage A and during Stage B1 construction and operation (of HS2 Phase One), delay at certain junctions, such as Euston Circus, will result on moderate adverse effects on the following bus routes: 10 (eastbound), 24 (northbound), 29 (northbound), 73 (northbound), 134 (northbound), 390 (northbound), and 14 (northbound). Passengers using route C19 (westbound) will experience a minor adverse effect. These effects can be mitigated through changes to signal control as part of adaptive control measures.

Changes in traffic flows will result from permanent road closures, changes to the local road network and relocated and increased

taxi operations, together with construction traffic generated by the construction of the revised scheme. Increases in traffic flows will mainly be concentrated on some roads to the east of Euston station in the Somers Town and King's Cross area, on A400 Hampstead Road between A501 Euston Road and the taxi rank on Cobourg Street, on the A501 Euston Road, A4201 Albany Street, to the immediate west of the station, as well as in the Regent's Park and Camden Town areas. In addition there will be increases in traffic on some roads to the south of the A501 Euston Road, particularly A400 Gower Street and B504 Judd Street.

The diversion impacts of road closures result in decreases in traffic. This will result in beneficial effects, as a result of decreased vehicles making it easier for pedestrians to cross the roads. This will mainly be concentrated on some roads to the south of A501 Euston Road between Gordon Street and A4200 Upper Woburn Place and on Tavistock Square (major beneficial), on A400 Hampstead Road to the north of the taxi rank on Cobourg Street and in the Camden Town area between A400 Camden Road and A5202 St Pancras Way.

Completion of construction Stage A will result in permanent effects as a result of the loss of on-street parking and loading facilities and will result in major adverse effects at the following locations: Granby Terrace Bridge; Cobourg Street; Gordon Street; Cardington Street and Melton Street. This will also result in a moderate adverse effect on Drummond Street. Parking spaces at the conventional station will also be lost, resulting in a major adverse effect.

There will be some additional effects on parking and loading facilities associated with construction Stage B1, with moderate adverse effects on Robert Street, Stanhope Street, Mackworth Street, Harrington Street and a major adverse effect on the Amphil Estate.

The Stage A station completed at the end of 2026 will include increased cycle parking capacity, resulting in a major beneficial effect. There will also be improvements to cycle and walking routes on roads surrounding both stations which will lead to reductions in delay and improvements to amenity and ambience, resulting in beneficial effects.

During construction Stage B1, temporary diversions to walking routes from the conventional station to streets to the west

of the high speed station (Drummond Street, Euston Street, Stephenson Way and Starcross Street) will increase walking distances, resulting in a minor adverse effect.

Increased flows on major roads and junctions will increase accident and safety risks on the A400 Hampstead Road/Robert Street junction. This will result in a minor significant effect.

Effects arising during Phase 2 operation (2041)

The operation of the scheme will result in a number of significant beneficial effects as reported in the summary of significant effects during construction Stage B1.

Delay at certain junctions close to the conventional and high speed Euston stations, such as Euston Circus, will result in bus delays, resulting in moderate adverse effects on the following bus routes: 10 (eastbound), 24 (northbound), 29 (northbound), 134 (northbound), and a minor adverse effect on route C19 (westbound). These effects can be mitigated through changes to signal control as part of adaptive control measures.

Additional demand on the LU network in 2041 will lead to some increased crowding and consequential delay on the Circle, Hammersmith & City and Metropolitan lines at Euston Square underground station, resulting in a minor adverse effect on passengers.

Changes in traffic flows will result from permanent road closures, changes to the local road network and relocated and increased taxi operations. Increases in traffic flows will mainly be concentrated on some roads to the east of the conventional station in the Somers Town and King's Cross area between A4200 Eversholt Street and A5203 York Way, to the immediate west of the high speed station, including

A400 Hampstead Road and the permanent taxi pick-up and set-down facility, as well as in the Regent's Park and Camden Town areas. In addition, there will be increases in traffic on some roads to the south of the A501 Euston Road, particularly A400 Gower Street, B504 Judd Street, A5200 Gray's Inn Road and A201 Farringdon Road.

Reductions in traffic flows will result in improvements for pedestrians crossing some roads. The diversion impacts of road closures

will result in decreases in traffic, resulting in significant beneficial effects. These will mainly be concentrated on some roads to the south of A501 Euston Road between Gordon Street and A4200 Upper Woburn Place, in the Bloomsbury area, and in the Camden Town area between A400 Camden Street and A5202 St Pancras Way.

Effects arising from the revised scheme on parking and loading bays are expected to be the same as those reported for construction Stage A.

The beneficial effects reported under construction stage B1 and operation on cycle parking and improvements to cycle and walking routes around the station will remain, with further cycle parking spaces added.

Increased flows on roads will result in increased accident and safety risks, resulting in minor adverse effects at the junction of A400 Hampstead Road and Drummond Street and the junction of A400 Hampstead Road and Cardington Street.

CFA2 – Camden Town

Air quality

Effects arising during Stage A construction (2017-2026)

The assessment results in new significant temporary adverse effects due to increases in NO₂ concentrations during some peak periods of construction activity at assessed receptors on: Oval Road; Jamestown Road; Parkway; Delancey Street; Royal College Street; Castlehaven Road; Crinan Street; Prince of Wales Road; Arlington Road; and Camden High Street. These are new locations assessed for impacts on air quality as a result of SES2 traffic changes that were not assessed or reported in the main ES.

The assessment results in new significant temporary adverse effects due to increases in NO₂ concentrations at locations on the following roads as a result of SES2 traffic changes: Camden High Street; Chalk Farm Road; Castlehaven Road; Camden Road; Greenland Road; Bayham Street; Pratt Street and Kentish Town Road. These roads were considered in the main ES, but no significant effects were identified.

These new adverse significant effects are due to the change in methodology described in

Section 1.8 of this NTS. Using the approach for describing impacts in the main ES, these effects would not be considered significant.

No new or different significant effects are anticipated for PM₁₀ concentrations.

Community

Effects arising during Stage A construction (2017-2026)

The following effects on the community will no longer occur as a result of the removal of the HS1-HS2 Link:

- amenity effects on residents associated with bridge replacement works;
- temporary and permanent effects on residential properties and a school due to the demolition of properties within the Hawley Wharf development;
- significant effects associated with land required at Camden Gardens, along with amenity effects;
- significant effect associated with the demolition of a dental practice on Kentish Town Road; and

- significant effect on the amenity of residents at Juniper Crescent.

New significant effects are predicted on the amenity of residents along Jamestown Road, Pratt Street, Oval Road, Arlington Street and Royal College Street due to increases in traffic and air quality effects.

Cultural heritage

Effects arising during construction

The main ES reported that moderate adverse effects would occur on the following heritage assets as a result of the construction of the HS1-HS2 Link: the Grade II listed Camden Road station; 51, 53 and 53a Kentish Town Road; 110 Camden Road; Primrose Hill station and platform; and the Up Empty Carriage Tunnel (a disused railway tunnel). However, as the link is no longer being constructed, these significant effects will be avoided.

Land quality

Effects arising during construction

The main ES reported that as part of the HS1-HS2 Link construction works, potentially contaminated land would be remediated. The

main ES reported that a negligible to moderate significant beneficial effect would occur as a result of the remediation of potentially contaminated land at the Camley Street vehicle repair garages. However, as the link is no longer being constructed, the remediation works will not be undertaken and this beneficial effect will not occur.

Landscape and visual assessment

Effects arising during construction

The main ES reported that a moderate adverse significant effect would occur during construction on the Roundhouse and Chalk Farm Road LCA due to construction activities, including those associated with the HS1-HS2 Link. However, as the link is no longer being constructed, this will reduce the construction activities associated with the SES2 scheme and reduce the effect from moderate adverse, to minor adverse, which is not significant. The SES2 scheme will still use the HS1-HS2 Link construction compound (now known as the Juniper Crescent satellite construction compound). However, the works at this compound will be on a smaller scale than the original scheme.

Construction activities, including those associated with the link would also have resulted in moderate adverse significant effects on the Camden Road station, the Viaduct and 19th Century Residential LCA and the Camden Markets LCA. However, these significant effects will now be avoided, as the link is no longer being constructed.

The main ES reported that significant effects would occur on a number of views. As the HS1-HS2 Link will no longer be constructed, these significant effects will be removed except for the effects reported on views south from Regent's Park Road and views west and north from Juniper Crescent. The main ES reported significant effects on these views as a result of the presence of the HS1-HS2 Link construction compound. As the link will no longer be constructed, this construction compound (now renamed the Juniper Crescent satellite construction compound) will now only be used to facilitate the railway reconfiguration works associated with the WCML between Euston station and Primrose Hill. The change in use of the construction compound will give rise to a different significant effect as the works at the construction compound will be on a smaller scale and will be seen in the context of the railway corridor and existing activities and

structures. Therefore, the effect on these views will reduce from major adverse, to moderate adverse.

Effects arising during operation

The main ES reported that significant adverse effects would occur on the following views as a result of the operation of the HS1-HS2 Link: view south from Randolph Street (major adverse effect); views north-east from Randolph Street (moderate adverse effect); and views south-east from Kentish Town Road/Jeffrey's Street Junction (major adverse effect). However, as the link is no longer being constructed, these significant effects will be avoided.

Socio-economics

Effects arising during Stage A construction (2017-2026)

The main ES reported that the construction of the HS1-HS2 Link would result in significant temporary amenity effects (as a result of noise, visual and traffic effects) on three businesses on the A502 Chalk Farm Road. However, as the link is no longer being constructed, these significant effects will be avoided.

The main ES reported that the construction of the HS1-HS2 Link would result in the following permanent socio-economic effects:

- the demolition of light industrial/car servicing accommodation at 120-136 Camley Street and demolition of warehousing/small business unit accommodation at 110 Camden Road (moderate adverse); and
- prevention of access to and/or use of areas used to operate businesses for the following: a car servicing business at 90-94 Baynes Street; industrial/warehousing and car servicing businesses operating from arches on the northern side of the North London Line Viaduct at 77-79 Randolph Street, 78 Randolph Street and 88 Randolph Street; and industrial/warehousing and storage businesses at 49 Kentish Road (arches 1-7) (moderate adverse).

However, as the link is no longer required these significant effects will be avoided.

Sound, noise and vibration

Effects arising during Stage A construction (2017-2026)

A number of residential properties were estimated to qualify for noise insulation to reduce noise levels associated with the construction of the HS1-HS2

Link to a level that is not significant. However, as the link is no longer being constructed, this is no longer required for these properties.

The main ES reported that significant noise effects would occur during the daytime, during construction of the link outside a number of residential properties on: the A503 Camden Road; Baynes Street; A5202 St Pancras Way and Wrotham Road; Randolph Street; A502 Chalk Farm Road; Agar Grove; A400 Kentish Town Road; Juniper Crescent; Regent's Park Road; and Hawley Road. However, as the link is no longer being constructed, these significant effects on the residential community will be avoided.

The main ES reported that significant effects as a result of the construction of the link would occur on the following non-residential receptors: offices in Bruges Place located on Baynes Street; shops located along the A502 Chalk Farm Road; offices located on Castlehaven Road; The Roundhouse; and Hawley Primary School. However, as the link is no longer required these significant noise effects will be avoided.

There will be an adverse noise effect from construction traffic on Albert Street, on the boundary of CFA1 and CFA2. This is a new effect and was not reported in the main ES.

Effects arising during Stage B1 construction and operation (2026-2033)

There are no new construction or operation sound, noise and vibration effects from Stage B1 Euston station construction and operation in CFA2.

The main ES reported that significant noise effects would occur around approximately 100 residential properties in the vicinity of Rousden Street, Randolph Street, St Pancras Way, Wrotham Road, Agar Place and Agar Grove as a result of the operation of the HS1-HS2 Link. However, as the link will no longer be constructed, these significant effects will be avoided.

Traffic and transport

Effects arising during Stage A construction (2017-2026)

The diversions and the works at Euston station (CFA1) are expected to result in changes in traffic flows. The significant effects due to delays at the following junctions reported in the main ES will be removed: A4201 Parkway/Arlington Road; Chalk Farm Road/Castlehaven Road; A400 Kentish Town Road/Hawley Crescent; and Pentonville Road/Claremont Square. The

changes will result in new major adverse effects on the following junctions: A502 Haverstock Hill/England's Lane and A501 Marylebone Road/Knox Street.

Adverse effects reported in the main ES on pedestrians as a result of increases in traffic making it difficult to cross the following roads will be avoided: Camden Gardens; Castlehaven Road; Chalk Farm Road; Farrier Street, Greenland Road; A400 Kentish Town Road; A4201 Parkway; Rousden Street, Royal College Street; and A5202 St Pancras Way.

New adverse effects as a result of increases in traffic making it more difficult for pedestrians to cross the roads will occur on the following roads: A503 Delancey Street (moderate/major adverse), A5202 Royal College Street (moderate adverse), Great Percy Street (minor adverse), Greenland Road (moderate adverse), Jamestown Road (moderate adverse), Pratt Street (minor/moderate adverse) and Westbourne Road (minor adverse). At Arlington Road; Regent's Park Road; and Prince of Wales Road, the adverse effects caused by increases in traffic making it more difficult to cross the roads reported in the main ES will reduce while it will increase at Oval Road.

Reductions in traffic result in beneficial effects as it will be easier for pedestrians to cross the following roads: A502 Chalk Farm Road (moderate beneficial), A503 Camden Road (moderate beneficial), Albert Street (minor beneficial) and Castlehaven Road (minor beneficial). However, beneficial effects reported in the main ES as a result of decreased traffic flow making it easier for pedestrians to cross the following roads will no longer occur at: Camden High Street, A400 Kentish Town Road, Jamestown Road, Pratt Street and Prince of Wales Road.

The temporary footpath diversions at Chalk Farm Road, Camley Street and Randolph Street, bus route diversions related to the closure of Chalk Farm Road, and parking suspension at Randolph Street and Castlehaven Road reported in the main ES are no longer required. All associated effects will be avoided.

The increased accident risk due to increased traffic levels at Royal College Street and Chalk Farm Road reported in the main ES will be avoided.

Effects arising from Stage B1 construction and operation (2026-2033)

Both with operation of Phase One services and combined Stage B1 construction and operation, diversion of traffic due to permanent road closures combined with increases to taxi flows will make it more difficult for pedestrians to cross the road, resulting in moderate adverse effects on the following roads: A503 Bayham Street; A503 Camden Road; A503 Delancey Street; A503 Pratt Street; and the effect reported in the main ES at A5200 York Way will increase from minor to moderate adverse.

New significant effects will occur as a result of increases in traffic making it more difficult for pedestrians to cross the following roads: Gloucester Avenue (moderate adverse), Carlton Hill (major adverse) and Regent's Park Road (major adverse).

Effects arising from operation (2041)

The main ES reported that Increases in traffic would result in significant effects on pedestrians as it would be more difficult to cross the following roads: Caledonian Road; Albert Street north of Delancey Street; Arlington Road; Camden Park Road; Oval Road and

A4201 Parkway. These significant effects will now be avoided.

The traffic changes resulting from permanent road closures and the operation of Euston station (CFA1) will result in new significant effects as a result of increases in traffic making it more difficult for pedestrians to cross the following roads: A201 King's Cross Road/Farringdon Road (moderate adverse); A503 Bayham Street (major/moderate adverse); A503 Camden Road (major/moderate adverse); A503 Delancey Street (major adverse); and A503 Pratt Street (major moderate adverse).

The main ES reported minor (during morning peak) and moderate (during evening peak) adverse effects due to increases in traffic resulting in delays for road users at the A5200 York Way. This will increase to major, both during the morning and evening peaks.

The main ES reported beneficial significant effects as a result of decreases in traffic making it easier for pedestrians to cross the following roads: Agar Grove; Bayham Street; Camden High Street; A503 Camden Road; A400 Camden Street; Copenhagen Street; and Greenland Road. These effects will no longer occur.

The main ES reported that reduced traffic flows will make it easier for pedestrians to cross the A5202 St Pancras Way, resulting in a moderate beneficial effect in the morning peak. However, the SES2 scheme will result in a moderate beneficial effect during both the morning and evening peaks.

The adverse significant effect on the permanent diversion of Camley Street footpath reported in the main ES will be avoided.

CFA3 – Primrose Hill to Kilburn (Camden)

Air quality

Effects arising during Stage A construction (2017-2026)

The assessment results in new significant temporary beneficial effects due to decreases in NO₂ concentrations at assessed receptors at Elliott Square, Primrose Hill Road, Quickswood and Adelaide Road.

The assessment results in new significant temporary adverse effects due to increases in NO₂ concentrations at assessed receptors along: Regents Park Road, St Mark's Square,

Malden Road, Malden Place, Mansfield Road, Meadowbank, Gloucester Avenue, The Vale, Haverstock Hill, King Henry's Road, Primrose Hill Road and Boundary Road. These are new locations assessed for impacts on air quality as a result of SES2 traffic changes that were not assessed or reported in the main ES.

The main ES reported significant adverse effects at receptors along: Haverstock Hill, The Marlowes, Englands Lane, Primrose Gardens and Queens Grove. These significant effects will be reduced.

The assessment also results in new significant temporary adverse effects at receptors along the following roads:

- along and bordering the A41, including: A41 Finchley Road, Cricklewood Lane, Canfield Gardens, Arkwright Road, Queen's Terrace, Queen's Grove, The Marlowes, Alexandra Road, St John's Wood Park, Sumpter Close, Frogna Lane, Heath Drive, A41 Hendon Way, Hocroft Avenue and Wayside; and
- on Adelaide Road, Chalk Farm Road, Prince Albert Road, Fleet Road, Albert Terrace and Gloucester Avenue.

These roads were considered in the main ES, but no significant effects were identified.

With the exception of one location assessed on Regent's Park Road, all of the new significant effects reported are due to the changes in the air quality methodology as described in Section 1.8 of this NTS. Using the approach for describing impacts in the main ES, these effects would not be considered significant.

No new or different significant effects are anticipated for PM₁₀ concentrations.

Community

Effects arising during Stage A construction (2017-2026)

As a result of the removal of the HS1-HS2 Link, a number of significant effects reported in the main ES will no longer occur. These are the predicted amenity effects on residents of approximately 20 residential properties at the eastern end of Adelaide Road and on Regent's Park Road, A502 Haverstock Hill and Rosslyn Hill and Hampstead High Street/Heath Street.

The SES2 changes give rise to new significant effects on the amenity (changes in traffic flows and air quality effects) of residents along Regent's Park Road, B509 Adelaide Road (east of

Primrose Hill Road), Albert Terrace, Chalk Farm Road, Primrose Hill Road and Gloucester Avenue.

Cultural heritage

Effects arising during construction

The main ES reported that as part of the construction of the HS1-HS2 Link, the non-designated Up Empty Carriage Line will be demolished, resulting in a moderate adverse effect. However, as the link will no longer be constructed, this significant effect will be avoided.

Landscape and visual assessment

Effects arising during construction

The main ES reported that moderate adverse significant effects would occur on a number of visual receptors due to the construction of the HS1-HS2 Link and the presence of cranes and construction activity on views north-east from Regent's Park Road/Gloucester Avenue and views south-east from Bridge Approach. However, as the link is no longer being constructed, these significant effects will be avoided.

Sound, noise and vibration

Effects arising during Stage A construction (2017-2026)

The main ES reported a significant construction noise effect on a health clinic as a result of the construction of the HS1-HS2 Link. However, as the link is no longer being constructed, this significant effect will be avoided.

The main ES reported that significant noise effects would occur along Adelaide Road, as a result of construction associated with the HS1-HS2 link. However, as the link will not be constructed, these significant effects will be avoided.

The main ES reported that significant noise effects would occur as a result of construction traffic at residential and non-residential receptors on the A502 Haverstock Hill between England's Lane and the B509 Adelaide Road, and England's Lane between the B509 Adelaide Road and the A502 Haverstock Hill. However, as a result of the revised design of Euston station and the revised CLOHAM traffic model, these significant effects are no longer likely.

Traffic and transport

Effects arising during Stage A construction (2017-2026)

For the SES2 scheme, the changes in traffic flows are expected to lead to new major adverse significant effects in relation to congestion and

delays at the A502 Haverstock Hill/England's Lane; and A501 Marylebone Road/Knox Street.

The main ES reported a major adverse significant effect at the junction of A502 Haverstock Hill/Park Hill Road as a result of increased traffic causing congestion and delays. However, as a result of changes to traffic patterns as part of the SES2 scheme, this significant effect will be avoided.

The significant effects on pedestrians as a result of road closures and associated traffic diversions reported in the main ES are removed on: St John's Wood Park; A502 Rosslyn Hill; Parkway; and Primrose Hill Road/England's Lane north of A509 Adelaide Road.

The main ES reported a number of effects on pedestrians as a result of changes to vehicle flows making it more difficult to cross some roads. As a result of the SES2 scheme the following changes have been identified:

- for Albert Terrace, Chalk Farm Road, Prince of Wales Road, Gloucester Avenue and A502 Haverstock Hill the adverse effects will reduce.
- for Regents Park Road, B517 Ferdinand Street and A41 Finchley Road the adverse effect will increase.

- for Primrose Hill Road, a moderate adverse effect was reported for HGVs in the main ES. As part of the SES2 scheme, a moderate adverse effect will now occur for all vehicles;
- new significant effects will occur on Alexandra Road (minor adverse), B509 Adelaide Road (east of Primrose Hill Road) (major adverse), B510 Fortune Green Road (minor adverse), Carlton Hill (major adverse), Crogsland Road (major adverse), Elsworthy Road (minor adverse), Fairfax Road (major adverse), Loudoun Road (major adverse), Parkhill Road (moderate adverse), Platt's Lane (moderate adverse) and Princess Road (moderate adverse).

There are expected to be significant beneficial effects as a result of reduced traffic flows making it easier for pedestrians to cross the following roads: A41 Finchley Road (moderate beneficial), A41 Wellington Road (moderate beneficial), A502 Chalk Farm Road (moderate beneficial), Abercorn Place (moderate beneficial), B509 Adelaide Road (east and west of Primrose Hill Road) (moderate beneficial), B509 Adelaide Road (east of Primrose Hill Road) (moderate beneficial), B517 Ferdinand Street (minor beneficial), B525 Avenue Road (moderate beneficial), Grove End Road (minor

beneficial), Primrose Hill Road (moderate beneficial), Princess Road (major beneficial) and Regent's Park Road (minor beneficial).

The potential safety and accident risks at A41 Finchley Road and St John's Wood Park reported in the main ES will be removed due to the changes in traffic flows.

Effects arising during operation (2033 onwards)

The SES2 scheme will result in increases in peak hour traffic flows causing new significant effects as a result of increases in traffic making it more difficult for pedestrians to cross the following roads: Abercorn Place (moderate adverse effect in the evening peak hour) and Albert Terrace (moderate adverse effect in the evening peak hour).

The main ES reported that there would be a reduction on traffic along the Prince Albert Road, making it easier for pedestrians to cross the road. However, as a result of the SES2 scheme this reduction in traffic and the associated benefits for pedestrians will now not occur.

CFA4 – Kilburn (Brent) to Old Oak Common

Air quality

Effects arising during construction

The assessment results in one new significant adverse construction effect as a result of increases in NO₂ concentrations, compared to those reported in the main ES, at an assessed receptor on Edgware Road. However, this effect is determined as significant as a result of the change in air quality methodology for describing impacts. The assessment also results in the removal of significant adverse construction effects for NO₂ at two locations assessed on Edgware Road, compared to those reported in the main ES.

Effects arising during operation

New significant effects as a result of increases in NO₂ concentrations are likely for two receptors on Old Oak Common Lane at the junction with Long Drive.

The main ES reported significant effects along Old Oak Lane, between the junctions with Channel Gate Road and Atlas Road, as a result of increases in NO₂ concentrations. However,

as a result of the SES2 scheme, these significant effects will be avoided.

Traffic and transport

Effects arising during construction

As a result of the revised scheme in CFA1, there will be changes to construction vehicle movements within CFA4, as the construction routes for the Euston station and approach area pass through CFA4.

During Stage A construction the changes in traffic flows will result in new significant traffic and transport effects in CFA4. The increase in traffic flows will make it more difficult for pedestrians to cross the road at Randolph Avenue (minor adverse effect) and Lanark Road (moderate adverse effect). As a result of the changes to HGV movements, it will be easier for pedestrians to cross the A5 Edgware Road resulting in a moderate beneficial effect.

During Stage B1 construction, in combination with the operation of HS2 Phase One services, the changes in traffic flows are expected to lead to new significant effects on pedestrians due to increases in vehicles making it more difficult to cross the road at the following

locations: B413 Clifton Gardens/Formosa Street/Shirland Road/Warwick Avenue (major adverse effect in the evening peak); and Sutherland Avenue (moderate adverse effect in the evening peak).

Effects arising during operation

The increase in traffic flows making it more difficult for pedestrians to cross the road as reported in the main ES has been removed at the following locations: Barlby Road; A4000 Old Oak Lane; St Mark's Road; A219 Shepherds Bush Road; A40/A219 Wood Lane on-slip (the slip road onto the A40); Cambridge Gardens; B412 Westbourne Park Road; A4000 Victoria Road; Chase Road; A219 Wood Lane; Sussex Gardens; East Churchfield Road and A4000 Wales Farm Road.

The main ES also reported a major adverse significant effect on pedestrians as a result of increases in vehicles making it more difficult to cross Du Cane Road. However, as a result of the SES2 scheme this effect will reduce to minor adverse.

The SES2 scheme will result in increased traffic flows on Fitzneal Street and Central Way. This will result in minor adverse effects on pedestrians

as a result of increases in traffic flows making it more difficult to cross these roads.

The main ES reported significant effects on vehicle users as a result of congestion and delay on a number of roads. However, as a result of the SES2 scheme, the level of significance of these effects will reduce for the Old Oak Common Lane and Du Cane Road junction (moderate adverse to minor adverse). The significant adverse effect reported in the main ES for Acton Lane/North Acton Lane, as a result of congestion and delays for vehicle users, will be avoided as a result of the SES2 scheme. The level of significance of effects as a result of congestion and delay will increase on: Old Oak Common Lane/A40 junction (moderate adverse to major adverse); Old Oak Common Lane/A4000; Old Oak Lane/Atlas Road (increasing from minor adverse to moderate adverse); and Acton Lane/Mordaunt Road (increasing from a minor adverse to a major adverse).

Traffic changes at Euston caused by the revised scheme will result in significant increases in peak hour traffic flows in CFA4. This will result in significant effects on pedestrians as a result of increases in traffic making it more difficult to cross the following roads during the evening

peak hour: B413 Clifton Gardens/Formosa Street/Shirland Road/Warwick Avenue (moderate adverse in 2026 and major adverse in 2041); Sutherland Avenue (moderate adverse in 2026 and 2041); and Elgin Avenue (moderate adverse in 2041).

The main ES reported that in 2041 HS2 passengers are forecast to generate around 300 two-way vehicle flows in the morning peak hour. However, since submission of the main ES, it has been identified that the numbers of two-way car and taxi trips associated with the operation of Old Oak Common station were incorrectly estimated. The HS2 passengers are estimated to generate 400 two-way vehicle trips (as a result of a combination of SES2 changes), rather than the 300 two-way vehicle flows stated in the main ES. This will result in a significant effect.

CFA5 – Northolt Corridor

Traffic and transport

Effects arising during construction

The main ES reported that no significant traffic and transport effects would occur during construction relating to the Willesden F-sidings satellite construction compound. As part of the SES and the AP2 ES a new access route would be provided to the construction compound. This will result in a moderate adverse significant effect as a result of the temporary loss of 22 car parking spaces, two of which are designated for use by people with disabilities. As a result of the revised design within CFA1, the construction compound will be required for eight years longer than previously reported in the main ES and the SES and AP2 ES. Therefore the significant effect will occur for a longer period. This will result in a different significant effect, however the level of significance remains as reported in the SES and the AP2 ES.

The SES and AP2 ES proposed that mitigation could be provided by reallocating some existing parking spaces as disabled parking spaces subject to agreement with the local highway authority. This would fully mitigate this effect.

Part 2: Additional Provision 3 Environmental Statement

7. Additional Provision 3 Environmental Statement

7.1 Introduction

A small number of changes to the scheme in LBC have been identified that require amendments to the Bill. Therefore, a third Additional Provision (AP3) to the Bill is being submitted accompanied by the AP3 ES.

The remainder of this NTS is structured as follows:

- Section 7.2: presents a summary list of all changes that require amendments to the Bill for CFAs 1 to 3; and
- Section 8: summary of residual environmental effects for amendments within the AP3: presents a list of all environmental effects that remain after mitigation measures have been put in place at the CFA level.

7.2 Summary of amendments within the AP3

Tables 5-7 provide a summary of each amendment within the AP3 ES, along with a description of the original scheme. Figures 5-7 show the approximate location of each of the amendments within CFAs 1 to 3.















Legend	
	AP3 amendment
	Station or depot
	Route in tunnel
	Route on surface
	Community forum area boundary
	Motorway
	Major road
	Existing railway
	Railway stations
	Airport
	Urban area
	Lake / reservoir
	Woodland, park or garden
	Main river / stream
	Local Authority boundary

Figure 5: Approximate location of AP3 amendments for Community Forum Area 1 – Euston station and approach

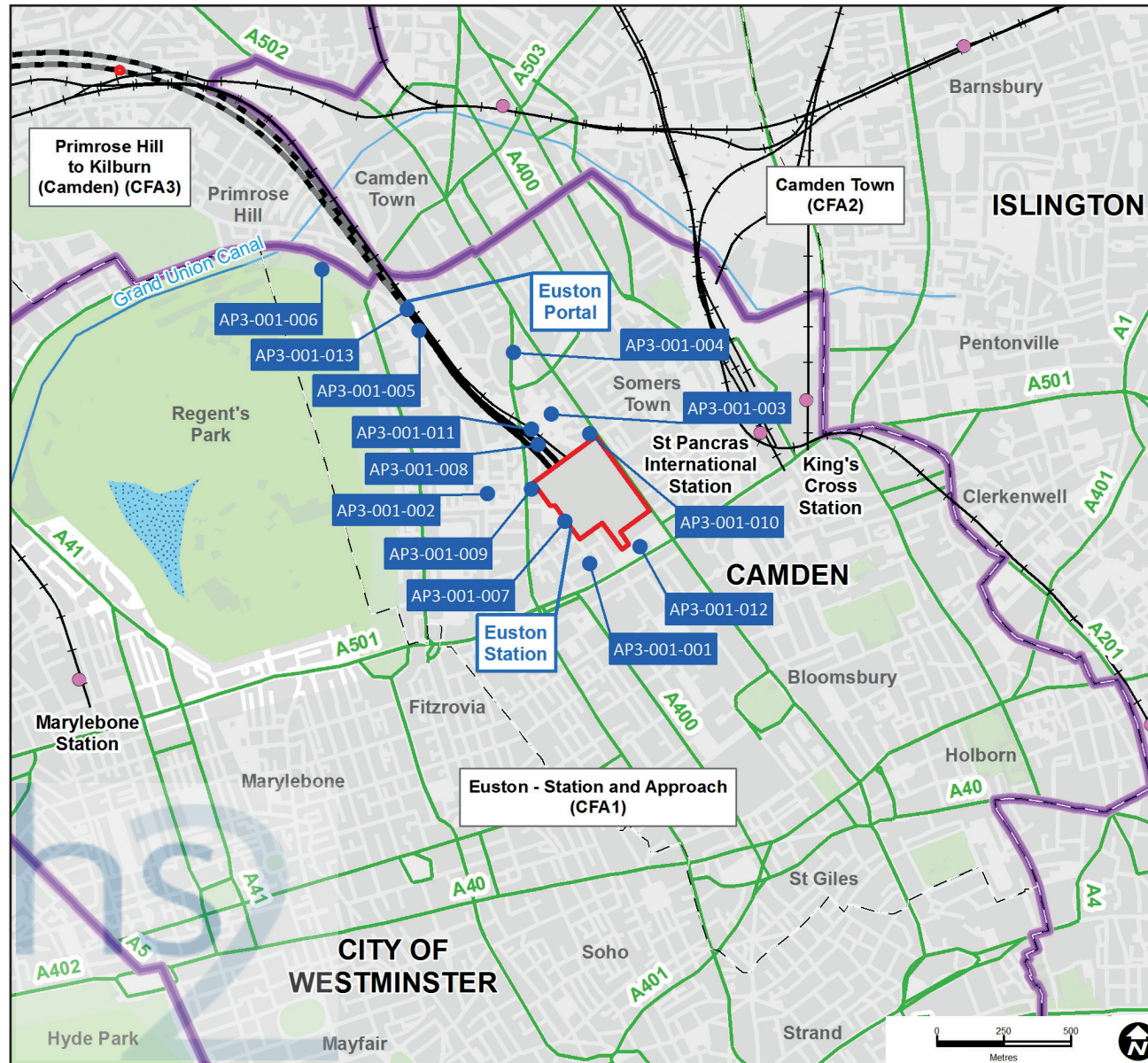


Table 5: Summary of amendments within CFA1 - Euston station and approach

Name of amendment	Description of the original scheme	Description of the AP3 revised scheme
Additional land for construction off Stephenson Way (AP3-001-001)	Not part of the original scheme.	Air rights are required over additional land to allow oversailing by cranes. These air rights are outside the Bill limits.
Additional land for utilities diversion at Stanhope Street (AP3-001-002)	Not part of the original scheme.	Additional land is required temporarily for the diversion of a gas main along Hampstead Road. Approximately 0.1ha of additional land is required that is outside the Bill limits.
Additional land at Barnby Street and for improvements to open space within the Amptill Estate (AP3-001-003)	The Bill provides for the diversion of utilities from Hampstead Road Bridge through the Amptill Estate via a temporary utilities bridge across the railway.	This land will still be used for the diversion of utilities. However, additional land is required to allow for improvements to open space. This will mitigate the loss of other publicly accessible space for the revised scheme. Approximately 0.6ha of additional land is required permanently that is outside the Bill limits.
Additional land for highway works at Hampstead Road and Harrington Square (AP3-001-004)	The Bill provides for highway works associated with the construction of the Hampstead Road Bridge.	Additional land is required to allow changes to the junction of Harrington Square and Hampstead Road in order to facilitate traffic management during the construction of the Hampstead Road Bridge. Approximately 0.2ha of additional land is required temporarily that is outside the Bill limits.
Additional land for the installation of ground anchors at Park Village East, north of Mornington Street Bridge (AP3-001-005)	Not part of the original scheme.	Additional powers are required to allow for the installation of permanent ground anchors beneath the buildings and gardens of 6 to 28 Park Village East, 1 to 8 Nash House and 12 Park Village West. These ground anchors are needed for the retaining structures. The amendment results from the inclusion of the reinstatement of Line X (AP3-001-0013) in the revised scheme. This amendment will permanently require rights to install ground anchors on additional land outside existing Bill limits.
Additional land for extension to lorry holding area and replacement parking, Regent's Park (AP3-001-006)	The Bill provides for the Zoological Society of London coach park to be used as a lorry holding area, during construction at Euston.	An extension to the parking area will be provided to mitigate for the lost spaces in the lorry holding area during construction. This temporary parking area will be reinstated to its previous use following construction. Approximately 1.3ha of additional land is required that is outside the Bill limits.
Extension of cycle track along Cobourg Street (AP3-001-007)	The Bill provides for a cycle track along Cobourg Street.	The starting point of the cycle track has been changed from that proposed as part of the original scheme. The track will be longer than originally proposed and will start from Hampstead Road. No additional land outside the Bill limits is required.

Name of amendment	Description of the original scheme	Description of the AP3 revised scheme
Provision of access road and ramp to high speed station basement from Hampstead Road Bridge (AP3-001-008)	The Bill provided for a small basement under the high speed station. Access was to be provided by lift.	A larger service basement for the high speed station will be provided. Between 2026 and 2033, this will be accessed by lift from an above-ground service yard. During construction Stage B1, a vehicle access ramp will be provided from Hampstead Road Bridge. This amendment requires changes to the Bill plans but no additional land outside the Bill limits is required.
Provision of taxi road and cycle track at northern station entrance from Hampstead Road (AP3-001-009)	The Bill provides for a permanent taxi rank to be located in Cobourg Street.	A sequence of interim taxi arrangements will be provided during construction. A taxi pick up and set down located in Cobourg Street will be used temporarily from 2026-2033. The taxi rank will then be permanently relocated in 2033 to the northern station entrance. This amendment requires changes to the Bill plans.
Provision of loop road for bus stand and welfare facilities, off Eversholt Street (AP3-001-010)	The Bill provides for an east west link bridge and a replacement access ramp to the parcels deck of the conventional station.	At this location, a bus stand will be built during construction Stage A to assist operation of the bus station in Euston Square. This bus stand will then be retained as a permanent facility. This amendment requires no land outside the Bill limits but requires the Bill plans to be amended.
Provision of bridge across railway for temporary utility diversions, south of Hampstead Road Bridge (AP3-001-011)	The Bill provides for a combined utility and cycle bridge across the railway south of A400 Hampstead Road Bridge.	This bridge will be provided at a slightly different location and will now only be used for utilities, since the revised scheme allows cyclists to continue to use Hampstead Road Bridge throughout the construction period. This amendment requires no land outside the Bill limits but requires the Bill plans to be amended.
Addition of the Grade II Euston Lodges including associated structures to Schedule 17 of the Bill (AP3-001-012)	These structures were not recorded as part of the Bill.	During construction Stage A, the Grade II listed railings above the underpass will be removed. The underpass is a curtilage structure included as part of the Grade II listed Euston Lodges. The underpass may need to be altered during the works to Euston Square Gardens in construction Stage B1. This requires Table 1 Schedule 17 to the Bill to be amended.
Reinstatement of Line X (AP3-001-013)	The Bill provides for the closure of Line X and the existing conventional dive under to accommodate the high speed railway.	The AP3 revised scheme proposes the reinstatement of Line X and the dive under. This will provide greater flexibility and resilience to the operation and capacity for the growth of the conventional rail services. Line X and the existing dive under facilitate the crossover of trains from the existing 'fast' lines on the western side of the tracks to the 'fast' platforms on the eastern side of Euston station. Line X will need to be closed for three years during the construction of the high speed railway. Changes to the design of the high speed railway structures have been made to allow Line X to run above the eastern high speed track. Works also require longer permanent ground anchors, as set out in AP3-001-005. The reinstatement of Line X itself will not require land outside the Bill limits, but requires the Bill plans to be amended.

This page is intentionally blank

Figure 6: Approximate location of AP3 amendments for Community Forum Area 2 – Camden Town

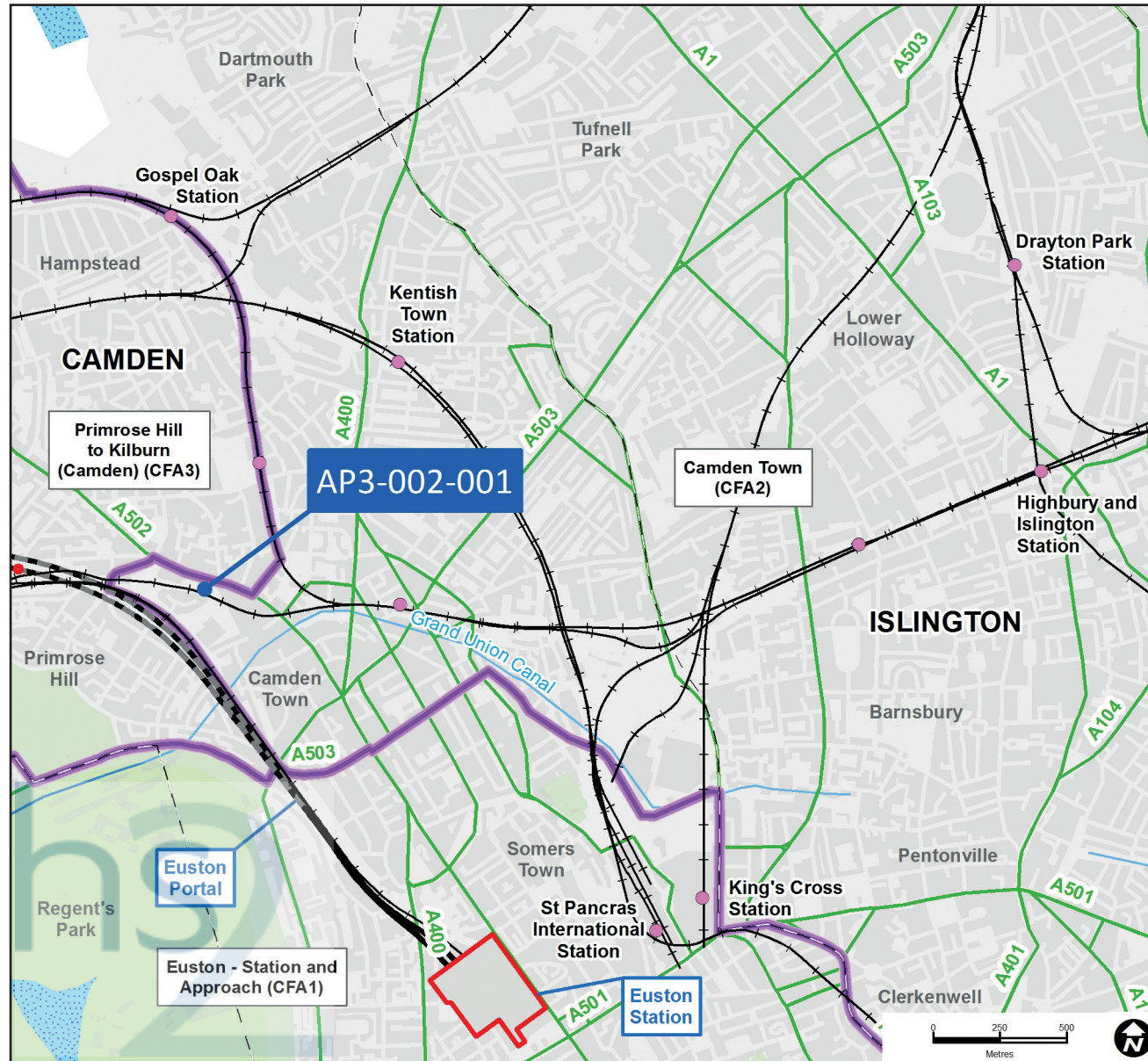


Table 6: Summary of amendments within CFA2 - Camden Town

Name of design change or construction assumption	Description of the original scheme	Description of the AP3 scheme
<p>Additional rights of access at Juniper Crescent to permit vehicular access to Chalk Farm Road (AP3-002-001)</p>	<p>The Bill provides for an access to the HS1-HS2 Link portal main construction compound via Juniper Crescent and the supermarket access road, from the A502 Chalk Farm Road satellite construction compound.</p>	<p>It has since been identified that a section of Juniper Crescent, west of the supermarket petrol station, required for accessing the construction compound, is a private road. Additional access rights are required to use the road as a construction traffic route.</p>

Figure 7: Approximate location of AP3 amendments for Community Forum Area 3 – Primrose Hill to Kilburn (Camden)

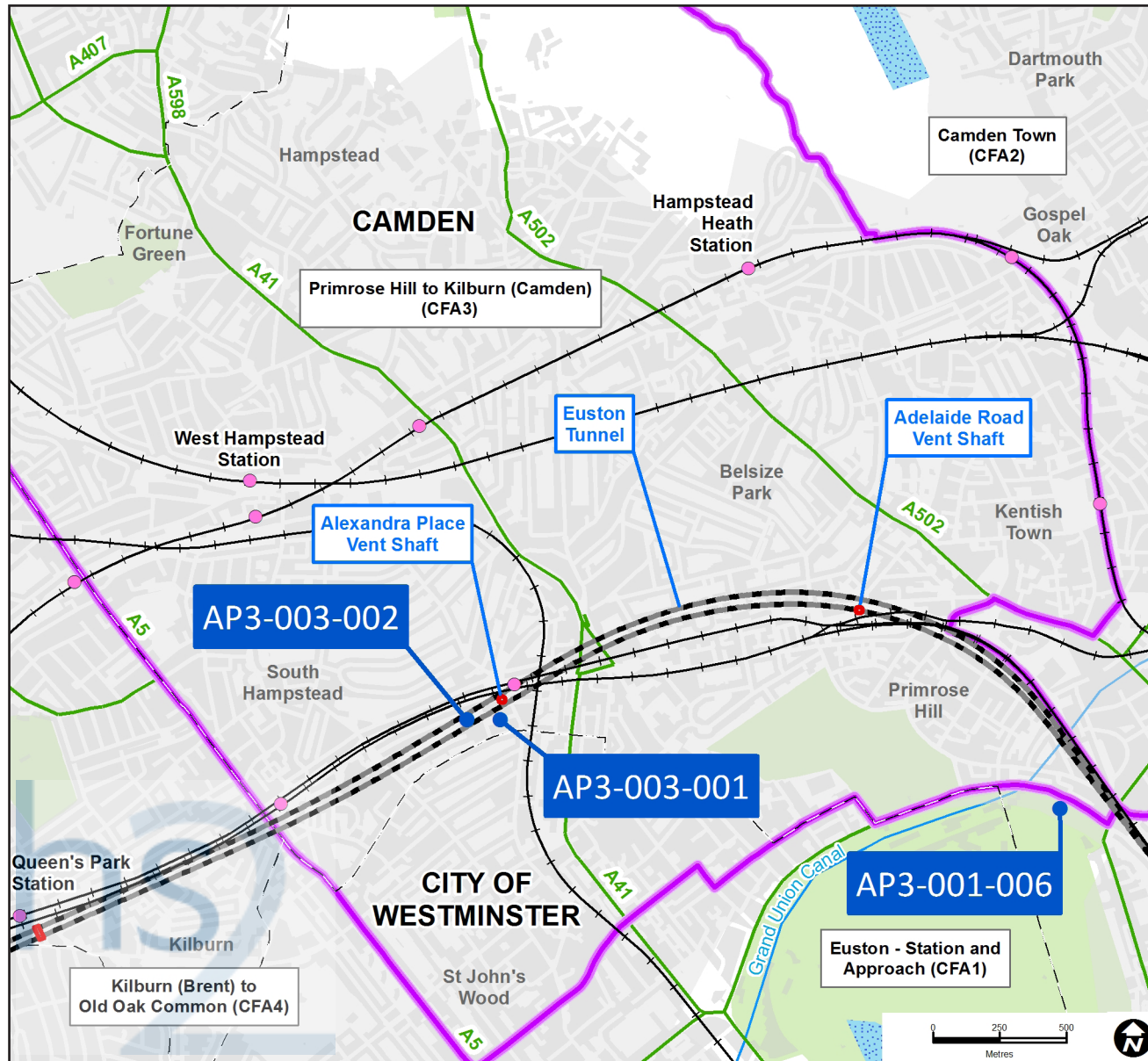


Table 7: Summary of amendments within CFA3 - Primrose Hill to Kilburn (Camden)

Name of design change or construction assumption	Description of the original scheme	Description of the AP3 scheme
Additional land to enable vehicle turning at Dinerman Court (AP3-003-001)	The Bill provides for the temporary closure of the northern entrance to Alexandra Place and for the existing southern one-way section of Alexandra Place to be converted to two-way. The Alexandra Place ventilation shaft main compound would be used to manage the construction of the ventilation shaft and support railway installation works. The Bill also provides for a temporary vehicle turning area in the Dinerman Court car park. The scheme involves the partial demolition of the Dinerman Court car park wall and temporary suspension of six private off-street car parking spaces to provide temporary facilities for servicing vehicles.	It has been identified that the land required within Dinerman Court car park and on the southern section of Alexandra Place was not included in the Parliamentary Plans. Additional powers are therefore required for temporary use of these areas.
Addition of Alexandra Road Estate concrete ramp and planter to Schedule 17 of the Bill (AP3-003-002)	The main ES identified Alexandra Road Estate as being Grade II* listed and located partially or wholly within the land required, temporarily or permanently, for the construction of the original scheme. An existing concrete ramp provides a pedestrian walkway between the Alexandra Road Estate and Loudoun Road with planters which provide a pedestrian link. The construction of the Alexandra Place ventilation shaft would require the removal of the concrete ramp and associated planter between the Alexandra Estate and Loudoun Road.	The concrete ramp and planter that form a pedestrian link between the Alexandra Road Estate and Loudoun Road is part of the Alexandra Road Estate Grade II* listing. The removal of these listed items will be added to Table 1 of Schedule 17 of the Bill.
Additional land required for extension of lorry holding area and replacement parking, Regent's Park (AP3-001-006)	For information on this amendment see AP3-001-006 in Table 5.	For information on this amendment see AP3-001-006 in Table 5.

8. Summary of residual environmental effects for AP3 amendments

8.1 Summary of residual environmental effects

In a number of cases, new or different likely significant effects have been identified as a result of the AP3 amendments. Those which remain after mitigation has been put in place are referred to as 'residual effects'. The significant effects referred to in the remainder of this NTS are residual effects.

There are no new or different likely significant route-wide effects as a result of the AP3 revised scheme.

CFA1

Within CFA1, the AP3 amendments have been assessed individually, where it is possible to do so, in Part 2 of the CFA 1 report. However, as the effects will occur in combination with the more substantial SES2 design changes, the AP3 amendments have also been assessed in Part 1 of the CFA1 report along with the SES2 design changes. As a result, any significant residual effects are presented within Section 6 (Summary of residual environmental effects for SES2 changes) of this NTS.

CFA3

Cultural heritage

Effects arising during construction

The main ES reported a significant temporary moderate adverse effect and significant permanent moderate adverse effect on the setting of the Alexandra Road Estate as a result of construction of the Alexandra Place ventilation shaft.

The construction of the Alexandra Place ventilation shaft will require the removal of the concrete ramp and planter, which form the pedestrian walkway between the Alexandra Road Estate and Loudoun Road. Since submission of the main ES, the concrete ramp and planter has been identified as being part of the curtilage of the Grade II* listed Alexandra Road Estate (AP3-003-002), an asset of high value, and its removal will constitute a partial demolition. The loss of the ramp and planter, which constitutes a low impact, will result in a different permanent moderate adverse effect on the Alexandra Road Estate.

High Speed Two (HS2) Limited

One Canada Square
London E14 5AB

T 020 7944 4908

E hszenquiries@hs2.org.uk

Y5