

High Speed Rail (West Midlands - Crewe)

Supplementary Environmental Statement 2 and
Additional Provision 2 Environmental Statement

Volume 2: Community Area report

CA5: South Cheshire

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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.

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

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

This report is part of the suite of documents that make up the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES) for Phase 2a of the High Speed Two (HS2) rail network between the West Midlands and Crewe. The SES2 and the AP2 ES are separate documents, however, they are bound together and presented in a number of volumes as described below and shown in Figure 1.

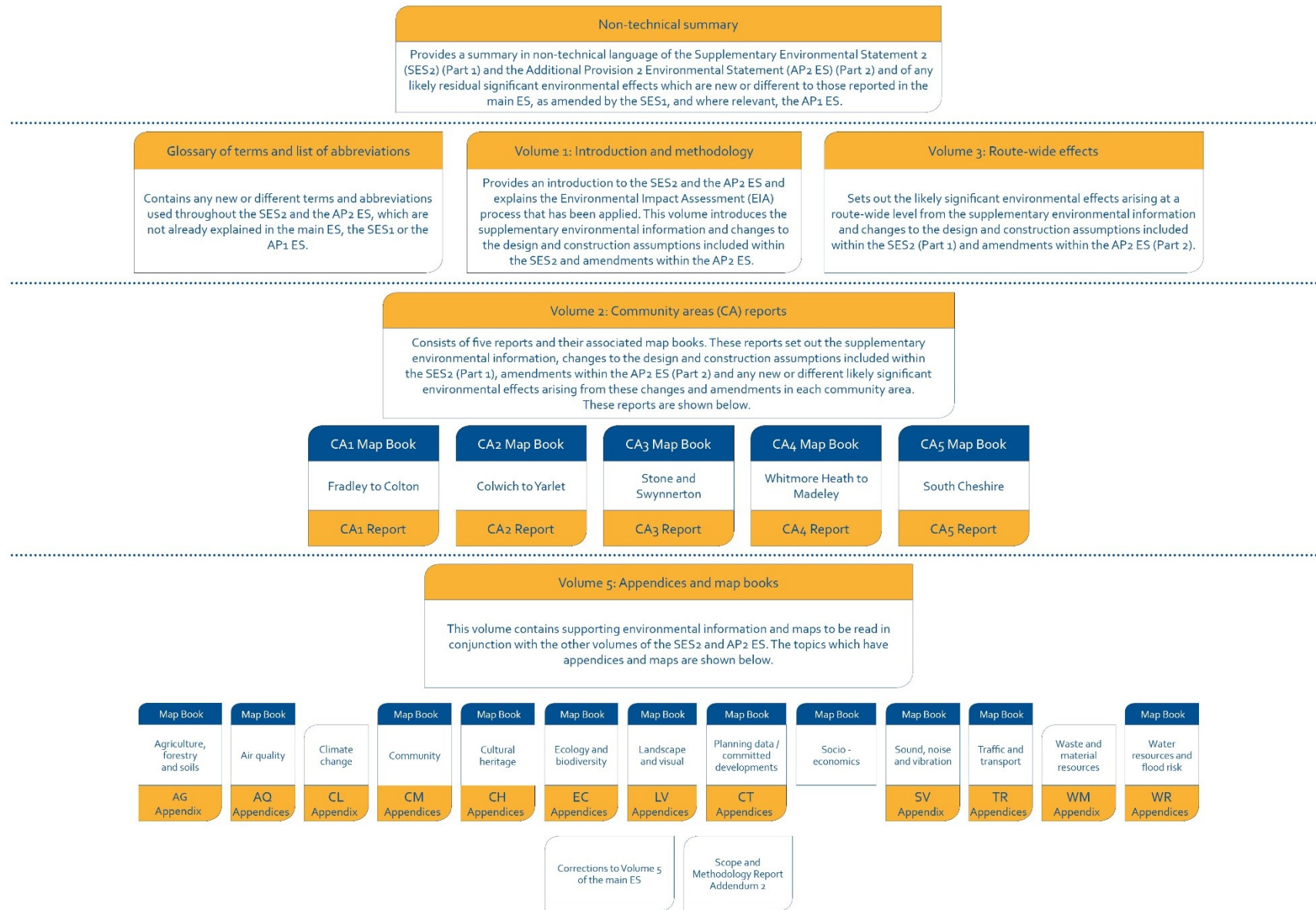
- Non-technical summary (NTS). This provides a summary in non-technical language of the SES2 (Part 1) and the AP2 ES (Part 2). It presents a summary of any likely residual significant environmental effects (i.e. effects which are likely to remain after mitigation measures are put in place), both beneficial and adverse, which are new or different to those reported in the Environmental Statement (ES) submitted to Parliament in July 2017 in support of the hybrid Bill for Phase 2a of HS2 ('the main ES'), as amended by the Supplementary Environmental Statement 1 (SES1) submitted in March 2018 (and by SES2 for the AP2 amendments). The AP1 amendments described in the AP1 ES submitted in March 2018 are also taken into account where relevant;
- Glossary of terms and list of abbreviations. This contains any new or different terms and abbreviations used throughout the SES2 and the AP2 ES which are not already explained in the main ES or SES1 and AP1 ES;
- Volume 1: Introduction to the SES2 and the AP2 ES. This introduces the supplementary environmental information and changes to the design and construction assumptions included within the SES2 and amendments within the AP2 ES. The report explains the environmental impact assessment (EIA) process that has been applied;
- Volume 2: Community area reports and map books. These report the supplementary environmental information and changes to the design and construction assumptions included within the SES2 (Part 1), amendments within the AP2 ES (Part 2) and any new or different likely significant environmental effects arising from these changes or assumptions and amendments in each community area. These effects are compared to those reported in the main ES, as amended by SES1 (and by SES2 for the AP2 amendments). The AP1 amendments are also taken into account where relevant. The maps relevant to each community area are provided in separate Volume 2 map books and should be read in conjunction with the relevant community area report;
- Volume 3: Route-wide effects. This describes any new or different likely significant environmental effects arising at a route-wide level from the supplementary environmental information and changes to the design and construction assumptions included within the SES2 (Part 1) and the amendments within the AP2 ES (Part 2) compared to those reported in the main ES, as amended by SES1 (and by SES2 for the AP2 amendments). The AP1 amendments are also taken into account where relevant; and

- Volume 5: Appendices and map book. These contain supporting environmental information and associated maps.

A Volume 4: Off-route effects report was produced as part of the main ES. This assessed the likely significant effects of the scheme at locations beyond the Phase 2a route corridor and its immediate environment. A separate Volume 4 has not been produced as part of the SES2 and AP2 ES. Any new or different significant off-route effects arising from the AP2 amendments are reported in the most relevant Volume 2 community area report. In the South Cheshire area, modifications and works in and around Crewe Station (amendment AP2-005-013), will remove the requirement for modifications to the Crewe to Cheadle Hulme Line infrastructure at Maw Green and Sandbach, which were beyond the HS2 Phase 2a corridor and reported in Volume 4, Off-route effects of the main ES. Any new or different significant effects arising from this amendment are reported in Part 2.

Certain reports and maps containing background information and data (BID) have been produced, which do not form part of the SES2 and AP2 ES. These documents are available online at www.gov.uk/hs2. The BID documents and maps present background survey information and other relevant background material.

Figure 1: Structure of the SES2 and AP2 ES



Structure of this report

This volume of the SES2 and AP2 ES is divided into five community area (CA) reports, which are in turn divided into two parts.

Part 1 provides supplementary environmental information, where relevant, relating to:

- new baseline information with respect to environmental surveys completed and additional information received since the production of the SES1 and AP1 ES;
- changes to the design and construction assumptions that do not require changes to the Bill; and
- corrections to the main ES, the SES1 and AP1 ES.

Part 2 provides environmental assessment information relating to proposed amendments to the design, which have resulted in the need to alter the powers conferred by the Bill.

Parts 1 and 2 include, where relevant:

- a description of the SES2 changes (Part 1) or the proposed AP2 amendments (Part 2) within the community area that have triggered the need for reassessment;
- an assessment of the environmental effects of the SES2 changes (Part 1) or the proposed AP2 amendments (Part 2) for relevant environmental topics considering the:
 - scope, assumptions and limitations of the assessment;
 - environmental baseline;
 - effects arising during construction;
 - effects arising from operation;
 - mitigation and residual effects; and
- a summary of any new or different likely residual significant effects as a result of the SES2 changes (Part 1) and the proposed AP2 amendments (Part 2).

1 Introduction

- 1.1.1 The High Speed Rail (West Midlands - Crewe) Bill was submitted to Parliament together with the main ES in July 2017. The SES1 and AP1 ES, which was submitted in March 2018, updated the main ES and contained a number of changes and amendments to the design of the original scheme (i.e. the scheme submitted in July 2017).
- 1.1.2 Since the submission of the main ES, SES1 and AP1 ES, updates to environmental baseline information and changes to the scheme design or assumptions have occurred, which may lead to new or different significant effects. These effects, depending on the type of change, are reported in the SES2 (Part 1) or AP2 ES (Part 2).
- 1.1.3 The Bill and associated Additional Provisions (APs) to the Bill described above, if enacted by Parliament, will provide the powers to construct, operate and maintain Phase 2a of HS2.
- 1.1.4 In order to differentiate between the original scheme and the subsequent changes, the terms set out in Table 1 are used.

Table 1: Scheme definitions

Scheme name	Definition	Relevant CAs
the original scheme	the Bill scheme submitted to Parliament in July 2017, which was assessed in the main ES	1 – 5
the SES1 scheme	the original scheme with the changes described in the SES1 submitted in March 2018	1 – 5
the AP1 revised scheme	the SES1 scheme as amended by the AP1 submitted in March 2018	1 – 3, 5
the SES2 scheme	the SES1 scheme with the changes described in the SES2	1 – 5
the AP2 revised scheme	the SES2 scheme as amended by the AP2	1 – 5

- 1.1.5 The following terms are used to differentiate between changes included in the SES2 and those included in the AP2 ES:
- ‘SES2 design changes’ – changes to the scheme design reported in the SES2 that do not require additional powers. In this report the term ‘design change’ is also used;
 - ‘SES2 changes’ – all changes reported in the SES2 that do not require additional powers. This may include new baseline information, changes to the design and construction assumptions, and corrections; and
 - ‘AP2 amendments’ – amendments to the scheme reported in the AP2 ES that include requirements for additional powers in the Bill. In this report the term ‘amendment’ is also used.
- 1.1.6 In addition, the following terms are also used in the SES2 and AP2 ES, where relevant:
- ‘SES1 design changes’ – changes to the scheme design reported in the SES1 that do not require additional powers;

- 'SES1 changes' – all changes reported in the SES1 that do not require additional powers. These may include new baseline information, changes to the design and construction assumptions, and corrections; and
- 'AP1 amendments' – amendments to the scheme reported in the AP1 ES that include requirements for additional powers in the Bill.

- 1.1.7 The SES2 (Part 1 of this report) contains updated environmental baseline information and scheme information relating to changes within the current limits and powers of the Bill, and therefore do not require an AP to the Bill. The SES2 changes within the South Cheshire area include:
- additional environmental baseline information for air quality, ecology and biodiversity, and traffic and transport;
 - changes to the design and construction assumptions that do not require changes to the Bill; and
 - corrections to the main ES.
- 1.1.8 These changes are described in Part 1 and are assessed on a topic by topic basis where relevant using the same approach adopted in the main ES, SES1 and AP1 ES.
- 1.1.9 The purpose of SES2 is to provide an assessment of any new or different likely significant environmental effects arising from the changes described. As there were SES1 changes in the South Cheshire area, the environmental effects of the SES2 changes are compared to those reported in the main ES as amended by SES1, with the AP1 amendments taken into account as appropriate.
- 1.1.10 The AP2 ES (Part 2 of this report) describes the likely significant effects of amendments to the design of the scheme, which require the use of land outside the original limits of the Bill, additional access rights, or other extensions to the powers conferred by the Bill, making it necessary to submit an AP to the Bill.
- 1.1.11 The AP2 ES reports the assessment of each amendment separately for all relevant topics. The purpose of the AP2 ES is to provide an assessment of any new or different likely significant environmental effects arising from the amendments, compared to those reported in the main ES, as amended by SES1 and SES2, taking into account AP1 amendments where relevant.
- 1.1.12 A combined assessment of new or different significant construction traffic effects, as a result of changes in construction traffic flows, is reported in Section 7. This is because alterations in construction traffic flows cannot generally be directly attributed to particular SES2 changes or AP2 amendments. Traffic and transport effects are reported first, since the effects arise from changes in construction traffic flows, and then other topics which are affected by traffic and transport changes are reported as necessary.
- 1.1.13 All other new or different significant traffic and transport effects are reported with the relevant SES2 change or AP2 amendment.
- 1.1.14 The standard measures that will be used to mitigate likely significant adverse environmental effects during construction and operation of the scheme are described in the main ES, Volume 1, Section 9 and the draft Code of Construction Practice

SES2 and AP2 ES Volume 2 – Community area 5, South Cheshire

(CoCP)¹ submitted in support of the Bill. Implementation of these measures has been assumed in this SES2 and AP2 ES.

¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Part 1: Supplementary Environmental Statement 2

2 Summary of changes in the South Cheshire area

2.1 New environmental baseline information

- 2.1.1 Since the production of the main ES and SES1 and AP1 ES, updates to the environmental baseline information have occurred which may lead to new or different significant effects for the following environmental topics.

Air quality

- 2.1.2 Air quality measurements for the baseline year of 2016 have become available in the South Cheshire area. These 2016 air quality measurements have been used to verify the air quality models for the assessment of traffic emissions which is presented in Section 7. This is done by comparing predicted pollutant concentrations against air quality measurements. Details of the 2016 air quality measurements and monitoring sites that are relevant to the assessment are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-005 and Map Series AQ-01.
- 2.1.3 Since the assessment of the original scheme, the Department for Environment, Food and Rural Affairs (Defra) has issued updated tools for undertaking air quality assessments, for example, background pollutant concentrations and road vehicle emission factors. Further explanation is presented in Volume 1. The air quality assessment undertaken for the SES2 changes and AP2 amendments using these updated tools is reported in Section 7.

Ecology and biodiversity

- 2.1.4 Additional Phase 1 habitat surveys have been undertaken and new ecological baseline data relating to the designation of nature conservation sites have been published by Cheshire Wildlife Trust for the South Cheshire area.
- 2.1.5 Details of the additional Phase 1 habitat surveys undertaken in the South Cheshire area are provided in background information and data (BID) document (BID EC-019-000), which accompanies the SES2 and AP2 ES. Details of the data relating to the designation of nature conservation sites is provided in SES2 and AP2 ES Volume 5: Appendix EC-001-000.
- 2.1.6 SES2 and AP2 ES Volume 5: Appendix EC-018-000 provides a summary of additional ecological survey data, which has resulted in no change to the conclusions of the main ES. SES2 and AP2 ES Volume 5: Appendix EC-016-000 identifies additional local/parish level effects that are likely to occur as a consequence of SES2 changes and AP2 amendments, but which will not be significant.
- 2.1.7 Details of the supplementary ecological information that is relevant to the SES2 assessment are provided in Section 3.

Traffic and transport

- 2.1.8 Additional information on traffic flows on one road in the South Cheshire area have been collected. In addition, a non-motorised user survey of one footpath in the area has been undertaken. This information is set out in BID document BID TR-001-000, which accompanies the SES2 and AP2 ES.
- 2.1.9 SES2 and AP2 ES Volume 5: Appendix TR-001-000 provides an assessment of the survey data, which has resulted in no change to the conclusions of the main ES.

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

- 2.2.1 Since the production of the SES1 and AP1 ES, the need to make changes to the design and construction assumptions has been identified. The changes in the South Cheshire area are as follows and are described in the following sections:

- construction programme; and
- SES2 engineering design changes.

- 2.2.2 These changes do not require a change to the Bill.

2.2.3 Changes to construction programme in the South Cheshire area

- 2.2.4 The main ES provided indicative details of the construction works to be managed from the construction compounds in the South Cheshire area, including duration of works, number of workers and a summary of the works to be undertaken.
- 2.2.5 In addition, a construction programme illustrating indicative periods for each of the core construction activities was also provided. See Volume 2, CA5, Section 2 of the main ES².
- 2.2.6 Since submission of the SES1 and AP1 ES, changes to the design and construction assumptions, including a route-wide review of the earthworks and movement of materials, have resulted in the need to make alterations to the indicative construction programme, shown in Figure 2 and reported in Section 3 of the SES2 and Section 5 of the AP2 ES.
- 2.2.7 The main SES2 design changes and AP2 amendments which give rise to changes to the construction programme are listed below and identified in Figure 2, which provides a revised indicative construction programme³. AP2 amendments which give rise to changes to the construction programme are included in this section for completeness, but the assessment of those amendments is reported in Section 5 of the AP2 ES.

² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe), Environmental Statement*, Volume 2, CA5, Figure 8 Indicative construction programme between 2020 and 2027. Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/627569/E17_Volume_2_CA5_South_Cheshire_WEB.pdf

³ NB: The site reinstatement shown in the programme is phased; phase one includes reinstatement of civils construction compounds and following completion of civils construction activities. The second phase includes reinstatement of haul roads, which remain until completion of track installation construction activities.

- 2.2.8 The SES2 design change which gives rise to changes to the construction programme is the Reconfiguration of the existing West Coast Main Line tracks between A500 Shavington Bypass and Madeley Bridleway 2 and provision of a new railway systems compound (SES2-005-001). This SES2 design change is described and reported in Section 3.
- 2.2.9 The following AP2 amendments give rise to changes to the construction programme:
- Additional land and a change to Bill powers required for a fuel pipeline diversion and new utility compound at Checkley Lane (AP2-005-002);
 - Additional land and a change to Bill powers required for the underground diversion of a section of a Scottish Power Energy Networks (SPEN) 132kv overhead line (OHL) at Checkley Lane and a utility compound (AP2-005-003);
 - Additional land and a change to Bill powers required for the diversion of a National Grid 1,050mm diameter high pressure gas pipeline (AP2-005-004);
 - Additional land and a change to Bill powers required for diversion of a National Grid 900mm diameter gas transmission pipeline at Den Lane (AP2-005-005);
 - Change in Bill powers for the realignment of the Blakenhall Bridleway 8 and associated accommodation overbridge (AP2-005-007);
 - Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132KV overhead line at Blakenhall (AP2-005-009);
 - Additional land required for two utility compounds at Newcastle Road and Chorlton Lane (AP2-005-011); and
 - Rail systems modifications and civil engineering works in and around Crewe Station; and removal of rail systems and civil engineering modifications to the Crewe to Cheadle Hulme Line (AP2-005-013).
- 2.2.10 The AP2 amendments above are considered to require a reassessment of the likely significant environmental effects and any mitigation and these are reported in Section 5 or Section 7, where relevant.
- 2.2.11 Other AP2 amendments give rise to changes to the construction programme, but are not of a scale to be shown in Figure 2. These AP2 amendments are also reported in Section 5 and the construction programme is as described in the relevant scheme descriptions.

South Cheshire	2020 Quarters				2021 Quarters				2022 Quarters				2023 Quarters				2024 Quarters				2025 Quarters				2026 Quarters				2027 Quarters							
Construction activity	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Motorail Terminal main compound																																				
Site preparation and set-up																																				
Works at Crewe Station and railway systems modifications																																				
Site reinstatement																																				
Tommy's Lane RRAP satellite compound																																				
Site preparation and set-up																																				
Railway systems modifications																																				
Site reinstatement																																				
Crewe Retail Park - Aldi satellite compound																																				
Site preparation and set-up																																				
Railway systems modifications																																				
Site reinstatement																																				
Rookery Bridge RRP satellite compound																																				
Site preparation and set-up																																				
Railway systems modifications																																				
Site reinstatement																																				
Railway systems																																				
Overhead line electrification, communications and traction power																																				
Works to WCML south of Crewe Station																																				
Testing and commissioning																																				

Key	
	Compound duration showing start and end of mobilisation. Activities below will be managed from the above compound. Second phase site reinstatement can occur post the compound demobilisation.
	Activity duration (indicates where there is no change from the main ES taking into consideration SES1 changes and AP1 amendments).
	Increase in duration as a result of a SES2 change or AP2 amendment.
	Decrease in duration as a result of a SES2 change or AP2 amendment (A yellow box indicates that works are no longer taking place in the quarter indicated).
	New element of the programme (compound or associated works) as a result of a SES2 change or an AP2 amendment.

SES2 engineering design changes

2.2.14 Table 2 provides a summary of the SES2 engineering design changes not requiring a change to the Bill which result in new or different significant effects in the South Cheshire area. Figure 3 shows the locations of these changes.

2.2.15 All dimensions in the following sections are approximate.

Table 2: Summary of changes to the engineering design not requiring a change to the Bill in the South Cheshire area

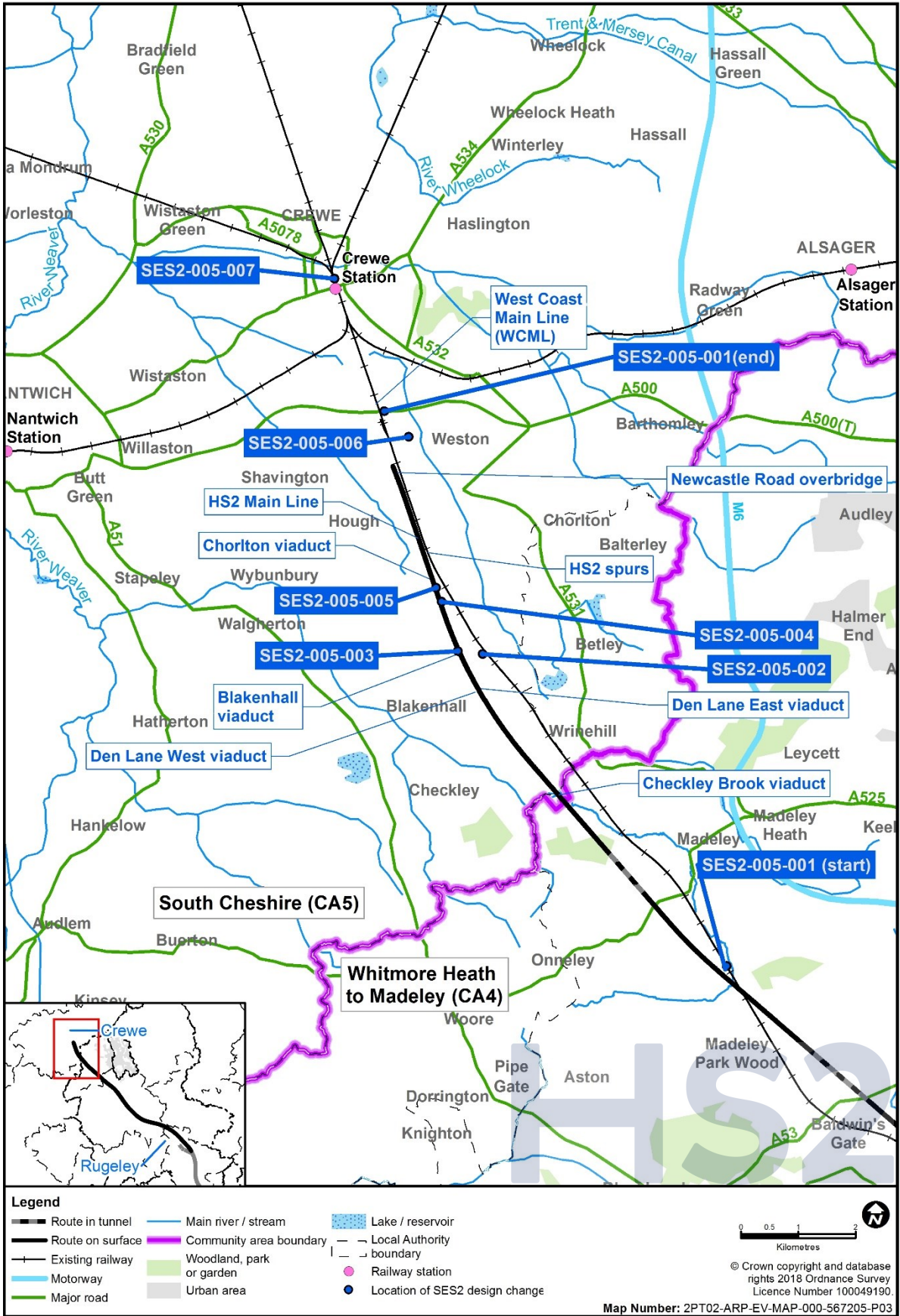
Name of SES2 engineering design change	Description of the SES1 scheme	Description of the SES2 scheme
<p>Reconfiguration of the existing West Coast Main Line tracks between Madeley Bridleway 2 and A500 Shavington Bypass and provision of a new railway systems compound</p> <p>SES2-005-001</p> <p>Map CT-06-235, J3 to A1; CT-06-236, J1 to A3; CT-06-236-R1, J9 to B10; CT-06-237, J1 to A5; CT-06-238, J4 to A6; and CT-06-239, J5 to C6, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Rail systems modifications would be required to the existing conventional rail infrastructure in the South Cheshire area to connect the HS2 spurs to the West Coast Main Line (WCML).</p> <p>A new section of the WCML, 4.2km in length, would be located to the west of the existing WCML between Blakenhall Bridleway 8 accommodation overbridge and Crewe South portal retained cutting.</p>	<p>The connection between the HS2 spurs and the WCML will be modified to connect the HS2 main line into the central lines of the WCML. There will be associated rail systems modifications between the Madeley Bridleway 2 in the south and A500 Shavington Bypass in the north.</p> <p>Part of this SES2 design change lies within the Whitmore Heath to Madeley area (CA4). A detailed description of the amendment and assessment of effects within the Whitmore Heath to Madeley area is reported in SES2 and AP2 ES Volume 2, Community area 4, Whitmore Heath to Madeley.</p>
<p>Amendment to the environmental mitigation around Half Moon inverted siphon</p> <p>SES2-005-002</p> <p>Map CT-06-237, I6 to I7, G2 to F1, E4 to C5 and D9 to A7, and Map CT-06-238, J6 to H7, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Half Moon inverted siphon would be provided for the diversion of a tributary of Swill Brook underneath the HS2 route, 100m north-west of the Blakenhall Bridleway 12 West accommodation overbridge.</p> <p>To the east of the inverted siphon, a maintenance access road and area of grassland habitat creation would be provided between the West Coast Main Line (WCML) and the HS2 route.</p> <p>Woodland habitat creation and landscape mitigation would be provided to the north-west of the Blakenhall Bridleway 12 West accommodation overbridge.</p>	<p>Additional mitigation will be provided, including enhancement of Swill Brook, the creation of a new ditch, six ecological mitigation ponds, new grassland habitat creation and new woodland habitat creation.</p>
<p>Local placement of surplus excavated material to the south-west of Blakenhall cutting</p> <p>SES2-005-003</p> <p>Map CT-06-237, I3 to G4, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Land would be temporarily required for the storage of surplus excavated material to the south-west of the Blakenhall cutting, between the Blakenhall southbound spur embankment and the Blakenhall New Bridleway.</p> <p>Following construction, the land would be returned to agricultural use.</p>	<p>Land will be permanently required for the storage of surplus excavated material to the south-west of the Blakenhall cutting, between the Blakenhall southbound spur embankment and the Blakenhall New Bridleway.</p> <p>The material will be graded so that it can be returned to agricultural use.</p>
<p>Relocation of the South Crewe auto-transformer station</p> <p>SES2-005-004</p> <p>Map CT-05-237, F6 to D7, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Land would be provided for the South Crewe mid-point auto-transformer station on the HS2 main line, approximately 200m north of Gonsley Green Farm.</p> <p>Access would be provided via an access road from the diverted Chorlton Lane to the north-west.</p>	<p>The South Crewe auto-transformer station will be relocated 115m north of its location in the original scheme and will be renamed the South Crewe auto-transformer station.</p> <p>The access layout will be reconfigured to accommodate the relocation of the compound and will include a new</p>

SES2 and AP2 ES Volume 2 – Community area 5, South Cheshire

Name of SES2 engineering design change	Description of the SES1 scheme	Description of the SES2 scheme
	Two landscape bunds, with mitigation planting in the form of woodland, would be provided adjacent to the South Crewe mid-point auto-transformer station, to the west of the HS2 main line.	turning head to accommodate HS2 maintenance vehicles. The two landscape bunds will be combined to form a single bund, with mitigation planting, and will be reshaped to accommodate the relocated compound.
Local placement of surplus excavated material to the north and south of Chorlton Footpath 3 SES2-005-005 Map CT-05-237, D3 to A5; and Map CT-06-237, D3 to A4, in the SES2 and AP2 ES Volume 2, CA5 Map Book	Two areas of land would be temporarily required for the storage of surplus excavated material adjacent to Chorlton Footpath 3, between Waybutt Lane and the existing WCML, to the east of the HS2 route. Following construction, the land would be returned to agricultural use.	Surplus excavated material will be placed permanently to the north and south of Chorlton Footpath 3, between Waybutt Lane and the WCML, to the east of the HS2 route. The material will be graded so that it can be returned to agricultural use.
Local placement of surplus excavated material to the east of the Casey Lane diversion SES2-005-006 Map CT-06-239, G4 to E3, in the SES2 and AP2 ES Volume 2, CA5 Map Book	Land would be temporarily required for the storage of surplus excavated material 200m to the north-east of the WCML between the HS2 spur (northbound) connection to the WCML and Basford Footpath 3, and adjacent to Casey Lane diversion. Following construction, the land would be returned to agricultural use.	Surplus excavated material will be placed permanently 200m east of the HS2 route between the HS2 spur (northbound) connection to the WCML and Basford Footpath 3, and adjacent to Casey Lane diversion. The material will be graded so that it can be returned to agricultural use.
Railway modifications at Crewe Station including the extension of Platform 5 and 6 to enable splitting and joining of HS2 trains SES2-005-007 Map CT-06-240, H4 to A5 and CT-06-241a, J5 to C5, in SES2 and AP2 ES, Volume 2, CA5 Map Book	To facilitate the connection of the HS2 route to the existing WCML, modifications would be required to the existing conventional rail infrastructure in the South Cheshire area. A new island platform would be provided at Crewe Station to accommodate services diverted via the Manchester Independent Lines tunnel at Crewe. Minor works, new signage, and information systems would also be included.	Platform 5 will be extended in order to accommodate the splitting and joining of the longer HS2 trains. Platform 5 and 6 will require alterations to accommodate two Secondary Means of Escape (SME) footbridges, lift shafts and passenger evacuation routes. Track modifications, signalling work and other associated rail systems modifications will be required to the WCML tracks from the south side of Crewe Station to the A500 Shavington Bypass, as well as Platform 5, 6 and 12 within Crewe Station. The relocation and modification of existing rail systems assets and new assets within the railway corridor will also be required.

SES2 and AP2 ES Volume 2 – Community area 5, South Cheshire

Figure 3: Locations of SES2 engineering design changes not requiring a change to the Bill in the South Cheshire area.



Reconfiguration of the existing West Coast Main Line tracks between Madeley Bridleway 2 and A500 Shavington Bypass and provision of a new railway systems compound (SES2-005-001)

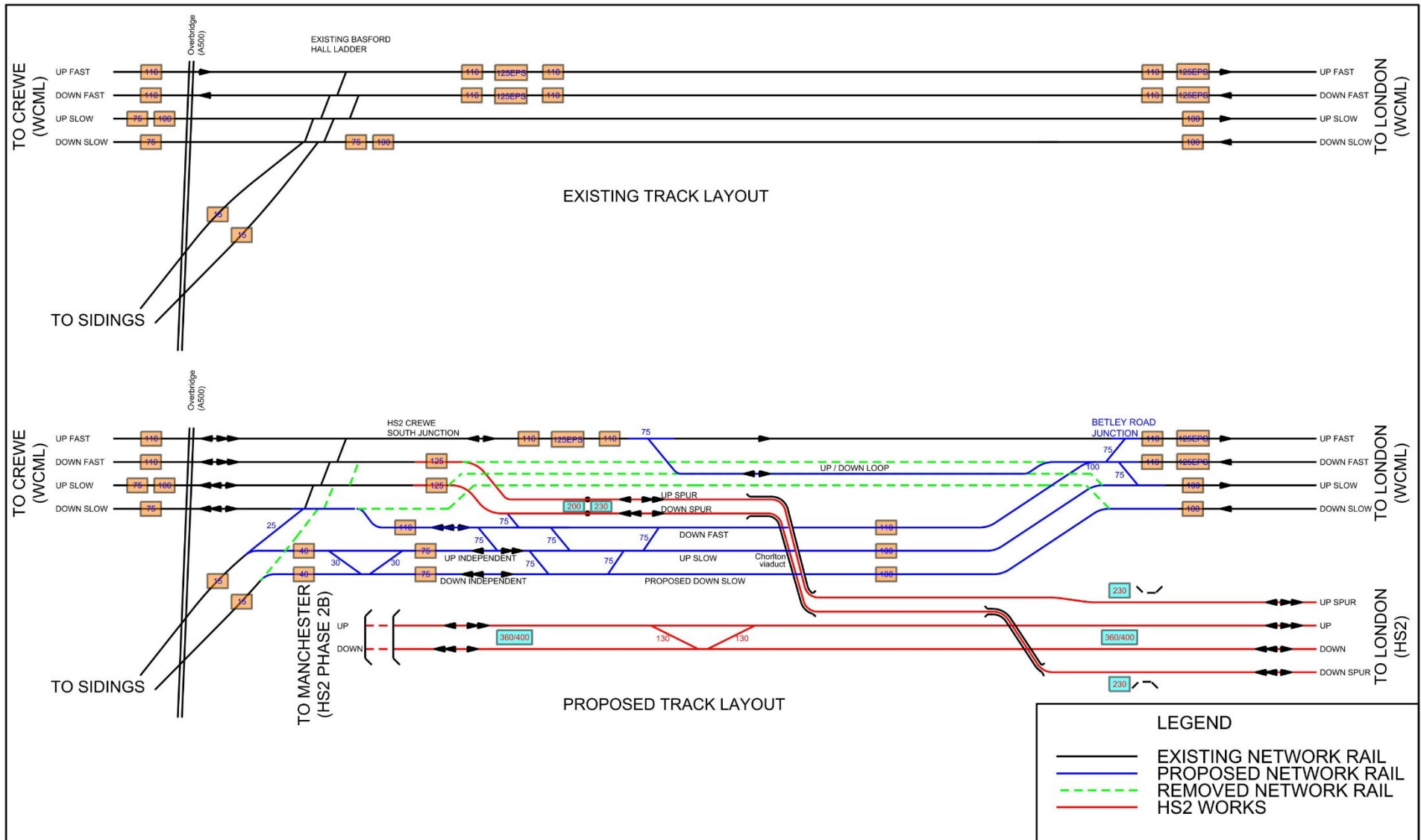
- 2.2.16 Part of this SES2 design change lies within the Whitmore Heath to Madeley area (CA4). A detailed description of the amendment and assessment of effects within the Whitmore Heath to Madeley area is reported in SES2 and AP2 ES Volume 2, Community area 4, Whitmore Heath to Madeley. Part of this SES2 design change lies within the South Cheshire area and the works associated with this amendment and assessment of effects on receptors within the South Cheshire area are described below.
- 2.2.17 The Bill provides for the modification of the West Coast Main Line (WCML) to accommodate the connection of the two HS2 spur tracks in the Whitmore Heath to Madeley (CA4) and the South Cheshire areas. In the South Cheshire area, the WCML consists of four tracks, the existing western track of the WCML would be realigned, and the two tracks from Basford Hall sidings would be extended to connect to the WCML at Betley Road junction. These three tracks would be within a new rail corridor. See Map CT-06-232, F4 to E4 in the main ES Volume 2, CA4 Map Book and Map CT-06-236-R1, F10 to CT-06-241a, H5, in the main ES Volume 2, CA5 Map Book.
- 2.2.18 The realigned track and two extended tracks would be in the new rail corridor adjacent to and west of the existing WCML. This would allow HS2 services on the two spur tracks to connect into the two west tracks of the WCML with high speed turn-outs⁴. Rail systems alterations and track modifications would be required within the existing WCML corridor from the River Lea viaduct in the Whitmore Heath to Madeley area (CA4) and Crewe Station in the South Cheshire area. See Map CT-06-232, F4 in the main ES Volume 2, CA4 Map Book to CT-06-241a, H5, in the main ES Volume 2, CA5 Map Book.
- 2.2.19 Since submission of the Bill, further design refinement and consideration of operational requirements have resulted in the modification of the connection between the two HS2 spurs and the WCML. The two HS2 spur tracks will connect to the two WCML central tracks instead of the two western WCML tracks. See Map CT-05-236, F1 to CT-05-239, C5, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It will still be necessary to realign the west side track of the WCML and extend two tracks from Basford Hall into a new corridor west of the existing WCML. The reconfiguration of the three realigned tracks will be managed within the existing WCML track corridor and the new WCML rail corridor identified in the original scheme. As a result of the modifications to the connection between the HS2 spurs and the WCML, the following amendments to the original scheme will be required in the South Cheshire area:
- three of the four existing WCML tracks will be diverted within the rail corridor of the original scheme, from south of the Blakenhall Bridleway 8 accommodation overbridge. See Figure 4 and Map CT-05-236-R1, F10, in the SES2 and AP2 ES Volume 2, CA5 Map Book;

⁴ A turnout is a mechanical installation enabling trains to be guided from one track to another, such as at a railway junction or where a spur or siding branches off.

- an additional connection will be provided between one of the WCML tracks (the eastern-most track of the three within the new rail corridor) and the HS2 northbound spur, passing under the Chorlton Footpath 7 overbridge. See Figure 4 and Map CT-05-238, C6 to B5, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- rail system modifications, such as signalling, overhead lines, cable routes and other railway systems equipment, will be required within the existing WCML corridor from south of the A500 Shavington Bypass to Madeley Bridleway 2. See Map CT-05-234, C2 in the SES2 and AP2 ES Volume 2, CA4 Map Book to Map CT-05-239, C5 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- Chorlton retaining wall 6 will reduce in length from 829m in the original scheme to 433m. The height will remain the same (up to 6m). See Map CT-05-238, C6 to A6, and CT-06-239, J6 to I6, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- Chorlton retaining wall 3 will increase in length from 525m in the original scheme to 617m. The height will remain the same (up to 12m). See Map CT-05-238, I5 to F5, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the remodelling of Crewe South Junction, between the A500 Shavington Bypass overbridge and Crewe Station, will no longer be required. See Map CT-05-239, B5, to CT-05-241a, H5, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- relocation of a railway systems signalling building on the west of the WCML, near the River Lea viaduct, will no longer be required and removes the need for the associated maintenance access road off Manor Road in the Whitmore Heath to Madeley area (CA4). See Map CT-06-232, F4, in the SES2 and AP2 ES Volume 2, CA4 Map Book;
- the Betley Road Junction will be modified, where the existing WCML meets the diverted WCML, to move the tracks within the new rail corridor to the east by up to 7m. See Map CT-06-237, J2 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- a new railway systems compound, Chorlton track sectioning location (TSL) compound, 675m² in area, and an access track with a vehicle turning facility will be provided off Chorlton Lane. See Map CT-05-238, F5 to E5, in the SES2 and AP2 ES Volume 2, CA5 Map Book; and
- the landscape earth bund south of Jubilee Farm provided in the original scheme will be moved 25m to the east to accommodate Chorlton TSL compound and an access track off Chorlton Lane. This does not change the length of the Chorlton Footpath 13 diversion (660m). See Map CT-06-238, G4 to F4, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

2.2.20 The high-speed turn-outs proposed in the original scheme, that would enable the HS2 spurs to connect to the WCML, are no longer proposed. The HS2 spurs will connect directly into the WCML central lines without turn-outs. See Figure 4 and Map CT-06-239, J5 to G5, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Figure 4: Existing and proposed track layout



- 2.2.21 Construction of the modifications will be managed from the Blakenhall cutting satellite compound, Chorlton cutting satellite compound, Crewe south portal satellite compound and Basford cutting main compound.
- 2.2.22 This SES2 design change will be constructed over a period of six years, commencing in 2021.

Topics included in the SES2 assessment

- 2.2.23 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES as amended by SES1 for the following topics: community and sound, noise and vibration. This is reported in Section 3.
- 2.2.24 A combined assessment of new or different significant construction traffic effects, as a result of changes in construction traffic flows, is reported in Section 7.

Amendment to the environmental mitigation around Half Moon inverted siphon (SES2-005-002)

- 2.2.25 The Bill provides for the permanent diversion of a tributary of Swill Brook underneath the HS2 route, via the Half Moon inverted siphon⁵, located approximately 100m north-west of the Blakenhall Bridleway 12 West accommodation overbridge. See Map CT-06-237, D5 to D6 in the main ES Volume 2, CA5 Map Book. To the east of the inverted siphon, a maintenance access road with an area of grassland habitat creation, for habitat replacement, would be provided. See Map CT-06-237, E4 to A5 in the main ES Volume 2, CA5 Map Book. An area of woodland habitat creation, to the north-west of the Blakenhall Bridleway 12 West accommodation overbridge, would be provided to integrate the scheme into the surrounding landscape. See Map CT-06-237, D6 to C6 in the main ES Volume 2, CA5 Map Book. An area of grassland habitat creation would be provided to the east of the existing WCML, approximately 625m north-west of the Blakenhall Bridleway 8 overbridge. See Map CT-06-237, G2 to F1 in the main ES Volume 2, CA5 Map Book.
- 2.2.26 Since submission of the Bill, further ecological surveys have confirmed the presence of water vole in an area adjacent to the location of Half Moon inverted siphon. Water vole are expected to forage on both sides of the watercourse. A dry passage or mammal ledge to provide connectivity across the HS2 route will not be practicable due to the water levels either side being higher than the inverted siphon. To compensate for the loss of ecological connectivity, a change to the environmental mitigation proposed in the original scheme will be provided to enhance the habitats in the local area. This SES2 design change includes:
- the provision of 0.5ha of new woodland habitat creation, to the north-west of the Blakenhall Bridleway 8 overbridge. This area of new woodland will replace part of a 2.3ha area of grassland habitat creation proposed in the original scheme, resulting in 0.5ha of this grassland habitat creation not being implemented in this location and therefore diversifying the mosaic of habitats

⁵ A form of culvert used on level ground where the water level has to be lowered to pass under the HS2 route, other railway or a road access; constructed using enclosed chambers on both sides of the HS2 route.

present. The grassland habitat creation area will be reduced to 1.8ha. See Map CT-06-237, G1 and G2 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- the provision of 1ha of woodland habitat creation adjacent to the maintenance access road, to the north-east of Wrinehill Road. See Map CT-06-237, I6 to I7 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the enhancement of the tributary of the Swill Brook and associated drains, which will include shelving of edges and 0.5ha of grassland habitat creation to support the Half Moon inverted siphon, on the east and west side of the HS2 route, following the direction of watercourse adjacent to Blakenhall Footpath 11. See Map CT-06-237, D7 to D9 and C7 to A7 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the provision of three new ecological mitigation ponds, within a new area of grassland habitat creation, 2.6ha in area, adjacent to the Blakenhall Bridleway 12 accommodation bridge. See Map CT-06-237, E4 to C5, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the provision of 1.7ha of new grassland habitat creation, to the north-west of the Blakenhall Bridleway 12 West accommodation overbridge. This area of new grassland will replace woodland habitat creation provided in the original scheme, resulting in 1.7ha of woodland habitat creation not being provided in this location. See Map CT-06-237 C7 to A7 in the SES2 and AP2 ES Volume 2, CA5 Map Book; and
- the provision of three new ecological mitigation ponds adjacent to Blakenhall Footpath 11, within the area of new grassland habitat creation to the north-west of the Blakenhall Bridleway 12 West accommodation overbridge. See Map CT-06-237 C7 and B7 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

2.2.27 Collectively, this SES2 design change will provide an additional 6.6ha of grassland habitat creation and 1.5ha of woodland habitat creation compared to the mitigation proposed in the original scheme. These will provide suitable habitat to sustain water vole populations through enhancing the habitats in the area on both sides of the HS2 route, thereby increasing their carrying capacity for water voles.

Topics included in the SES2 assessment

2.2.28 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES as amended by SES1 for ecology and biodiversity. This is reported in Section 3.

Local placement of surplus excavated material to the south-west of Blakenhall cutting (SES2-005-003)

2.2.29 The Bill provides for the temporary storage of surplus excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be provided to the south-west of the Blakenhall cutting, between the Blakenhall southbound spur embankment and the Blakenhall New Bridleway.

Following construction, the land would be returned to agricultural use. See Map CT-05-237, I4 to G4, in the main ES Volume 2, CA5 Map Book.

- 2.2.30 As part of a route-wide review of earthworks and the movement of materials, the scope for permanent local placement of surplus excavated material on land already required for the construction of the scheme has been considered. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus excavated material, and reduce the environmental impacts arising from heavy goods vehicle (HGV) movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.31 Surplus excavated material will be permanently placed to the south-west of the Blakenhall cutting, between the Blakenhall southbound spur embankment and the Blakenhall New Bridleway, in the area occupied by a temporary material stockpile in the original scheme. The location for the placement of surplus excavated material will cover an area of 3ha and will be up to 3m in height. The surplus excavated material will be graded to allow the area to return to agricultural use following construction. See Map CT-06-237, I3 to G4 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 2.2.32 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state using good practice techniques to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of this restored land.
- 2.2.33 Surplus excavated material will be placed in the local placement area throughout the construction period as suitable material arises. This process will be managed from Blakenhall cutting satellite compound.

Local alternatives

- 2.2.34 A process of identifying potentially suitable local placement areas in the Blakenhall area was undertaken.
- 2.2.35 This process identified five locations in the Blakenhall area for the placement of surplus excavated material. These were considered against criteria, as identified in Volume 1, which set out the key considerations for the suitability of local placement sites. The five locations are reported below.
- 2.2.36 When considered against the criteria, the following two options were not taken forward for further consideration as they were not considered to be reasonable options:
- Option 1 would be located adjacent to the Blakenhall New Bridleway, immediately south of Blakenhall cutting. This option was not taken forward as it would conflict with the Delta Junction satellite compound, required to support railway systems construction activities; and
 - Option 2 would be located to the south-west of the Blakenhall Bridleway 12 Central accommodation underbridge, south of Crewe South cutting.

This option was not taken forward as it would conflict with the Crewe South cutting satellite compound, required to support civil engineering and railway systems construction activities.

- 2.2.37 The remaining three options were taken forward into the SES2 scheme.
- 2.2.38 Option 5 would be located adjacent to the Blakenhall New Bridleway, immediately south of Blakenhall cutting. The location for this option meets with the majority of the criteria, however the surplus material would in proximity to an unnamed tributary of the Gresty Brook. In addition, this option would create a landform, potentially resulting in flooding and minor visual impacts. This option has been taken forward into the SES2 scheme as, on balance, the potential flooding effects would be mitigated by design, and the visual impacts would be limited to the construction period.
- 2.2.39 In addition, Option 6 and Option 7 were identified as suitable locations. Option 6 would be located between Waybutt Lane and the WCML, north-west of Chorlton Footpath 3, on the north side of the HS2 main line. Option 7 would be between Waybutt Lane and the WCML, south-east of Chorlton Footpath 3, also on the north side of the HS2 main line. These options have been taken forward into the SES2 scheme and are collectively reported as the SES2 design change of Local placement of surplus excavated material to the north and south of Chorlton Footpath 3 (SES2-005-005).

Topics included in the SES2 assessment

- 2.2.40 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, are reported in Section 7.
- 2.2.41 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any other environmental topics.

Relocation of the South Crewe auto-transformer station (SES2-005-004)

- 2.2.42 The Bill provides for the South Crewe mid-point auto-transformer station, on the western side of the HS2 main line, approximately 200m north of Gonsley Green Farm. Access would be provided via an access road from the diverted Chorlton Lane to the north-west. See Map CT-06-237, E7 to E6 in the main ES Volume 2, CA5 Map Book.
- 2.2.43 Two landscape bunds would be provided, one 105m in length and up to 3m in height and one 70m in length and up to 2m in height, adjacent to the South Crewe mid-point auto-transformer station to the west of the HS2 main line. The landscape bunds, with mitigation planting in the form of woodland, would help integrate the South Crewe mid-point auto-transformer station into the surrounding landscape and provide visual screening for residents of Gonsley Green Farm. See Map CT-06-237, E6 in the main ES Volume 2, CA5 Map Book.
- 2.2.44 Since submission of the Bill, further design refinement has identified a need to relocate the South Crewe mid-point auto-transformer station. The auto-transformer station compound will be relocated approximately 115m north of its proposed position in the original scheme and will therefore be renamed the South Crewe

auto-transformer station. The compound access road will be modified, to accommodate the relocation of the compound, and will include a new turning head to accommodate HS2 maintenance vehicles. See Map CT-06-237, E7 to E6 in the SES2 and AP2 ES Volume 2, CA5 Map Book. The compound footprint, buildings and equipment allocated for the South Crewe auto-transformer station site will remain the same as the original scheme.

- 2.2.45 The two landscape bunds will be combined to form a single bund, up to 2m in height and 190m in length. The bund, with associated woodland habitat creation as proposed in the original scheme, will be modified to accommodate the relocated auto-transformer station compound. See Map CT-06-237, F6 to E7 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 2.2.46 This SES2 design change will be constructed over a period of six months, commencing in 2024.

Topics included in the SES2 assessment

- 2.2.47 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES as amended by SES1 for landscape and visual. This is reported within Section 3.

Local placement of surplus excavated material to the north and south of Chorlton Footpath 3 (SES2-005-005)

- 2.2.48 The Bill provides for the temporary storage of surplus excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. Two temporary material stockpiles would be located to the north and south of the Chorlton Footpath 3, between Waybutt Lane and the existing WCML, to the east of the HS2 route. Following construction, the land would be returned to agriculture use. See Map CT-05-237, D3 to A4 in the main ES Volume 2, CA5 Map Book.
- 2.2.49 As part of a route-wide review of earthworks and the movement of materials the scope for local placement of surplus excavated material on land already required for the construction of the scheme has been considered. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus excavated material, and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.50 Surplus excavated material will be placed in two locations to the north and south of Chorlton Footpath 3, between Waybutt Lane and the existing WCML, to the east of the HS2 route. See Map CT-06-237, D3 to A4 in the SES2 and AP2 ES Volume 2, CA5 Map Book. The first location for the placement of surplus excavated material, to the north of Chorlton Footpath 3, will cover an area of 2.8ha and will be up to 3m in height. To the south of Chorlton Footpath 3, the second location for the placement of surplus excavated material will cover an area of 2.4ha and will be up to 3m in height. The surplus excavated material will be graded to allow these areas to be returned to agricultural use following construction.
- 2.2.51 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, using good practice techniques to handle, store and reinstate

soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.

- 2.2.52 Surplus excavated material will be placed in the local placement areas throughout the construction period as suitable material arises. This process will be managed from Blakenhall cutting satellite compound.

Local alternatives

- 2.2.53 Options considered as potentially suitable locations for local placement in the Blakenhall area are described under Local placement of surplus excavated material to the south-west of Blakenhall cutting (SES2-005-003).

Topics included in the SES2 assessment

- 2.2.54 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, are reported in Section 7.
- 2.2.55 This SES2 design change is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any other environmental topics.

Local placement of surplus excavated material to the east of the Casey Lane diversion (SES2-005-006)

- 2.2.56 The Bill provides for the temporary storage of surplus excavated material, adjacent to the HS2 route, for reuse within the scheme during construction. A temporary material stockpile would be provided 200m to the north-east of the West Coast Main Line (WCML) between the HS2 spur (northbound) connection to the WCML and Chorlton Footpath 3, and adjacent to Casey Lane diversion. Following construction, the land would be returned to agricultural use. See Map CT-05-239, G4 to E3 in the main ES Volume 2, CA5 Map Book.
- 2.2.57 As part of a route-wide review of earthworks and movement of materials, the scope for local placement of surplus excavated material on land already required for the construction of the scheme has been considered. Use of local placement areas would reduce the need for off-site road transportation and disposal of that surplus material, and reduce the environmental impacts arising from HGV movements on the highway network. Volume 1 of the SES2 and AP2 ES provides further detail on the local placement of surplus excavated material.
- 2.2.58 Surplus excavated material will be placed 200m to the east of the HS2 route between the HS2 spur (northbound) connection to the WCML and Basford Footpath 3, and adjacent to Casey Lane diversion. The location for the placement of surplus excavated material will cover an area of 1.9ha and will be up to 3m in height. The surplus excavated material will be graded to allow the area to return to agricultural use following construction. See Map CT-06-239, G4 to E3 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 2.2.59 The agricultural soil profile (i.e. the topsoil and subsoil) will be available for agricultural restoration so that agricultural soils can be returned to the same condition as their pre-excavated state, and good practice techniques will be used to handle, store and reinstate soils. Given the currently unknown nature of the surplus excavated material beneath the restored agricultural soil profile, it is likely that agricultural land drainage works will be required when restoring this area to achieve this condition and to ensure ongoing agricultural management of the restored land.
- 2.2.60 Surplus excavated material will be placed in the local placement areas throughout the construction period as suitable material arises. This process will be managed from the Chorlton cutting satellite compound.

Local alternatives

- 2.2.61 A process of identifying potentially suitable local placement areas in the Basford area was undertaken.
- 2.2.62 This process identified three locations in the Basford area for the placement of surplus excavated material. The identified locations were considered against criteria, as identified in Volume 1, which set out the key considerations for the suitability of local placement sites. The three locations are reported below.
- 2.2.63 When considered against the criteria, the following two options were not taken forward for further consideration as they were not considered to be reasonable options:
- Option 3 would be located to the west of the Newcastle Road overbridge, west of the HS2 main line. This option was not taken forward as it would conflict with the Crewe South portal satellite compound, required to support railway systems construction activities; and
 - Option 4 would be located between the retained section of Newcastle Road and the realigned Newcastle Road, north-east of the West Coast Main Line. This option was not taken forward as it would conflict with the Chorlton cutting satellite compound, required to support civil engineering construction activities.
- 2.2.64 Option 8 would be located to the north-west of the Casey Lane diversion, north-west of Basford cutting. The location for this option meets with the majority of the criteria, however it would potentially result in minor landscape impacts. This option has been taken forward into the SES2 scheme as, on balance, the landscape effects would be minor and limited to the construction period.

Topics included in the SES2 assessment

- 2.2.65 This SES2 design change is considered to require reassessment of the environmental effects and mitigation in the main ES as amended by SES1 for landscape and visual. This is reported within Section 3.
- 2.2.66 The assessment of the changes to construction traffic flows and traffic related effects as a result of this SES2 design change in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Railway modifications at Crewe Station including the extension of Platform 5 and 6 to enable splitting and joining of HS2 trains (SES2-005-007)

- 2.2.67 The Bill provides for a new island platform approximately 110m in length to accommodate some conventional rail services to allow high speed trains to pass through or stop at existing platforms at Crewe Station. Minor works within the existing Crewe Station would include the provision of new signage and information systems. The new island platform would be situated to the west of the existing Crewe Station platforms. There would be no alterations to platform 5 in the original scheme. See Map CT-06-241a, J5 to D6, in main ES, Volume 2 CA5 Map Book.
- 2.2.68 Since submission of the Bill, further design refinements have been undertaken and operational requirements have been extended, requiring rail systems modifications and civil works at Crewe Station to meet HS2 Ltd's requirements for the splitting and joining of HS2 trains at platforms 5, 6 and 12 and to integrate with Crewe Hub⁶. The modifications include an extension to the southern end of platform 5, 85m in length and 3.5m wide. This will enable platform 5 to join two 200m trains to provide flexibility during operation, allowing HS2 trains to serve more stations without increasing the overall number of trains on the HS2 infrastructure. Further widening of platform 5 by 1m will be required for a new secondary means of escape footbridge and associated evacuation lift at the southern end of the extended platform 5, 300m south-east of the A534 Nantwich Road. This will facilitate evacuation of passengers in an emergency. An additional secondary means of escape footbridge will be required at the northern end of platform 5, 100m north-west of the A534 Nantwich Road. The secondary means of escape bridges will be accessed via a set of staircases, with lifts on both platform 5 and platform 6. The bridges will have a height clearance of 8.7m above track level and up to 15.2m above ground level. The southern end of platform 6 will be extended by 6m in length to provide access to the secondary means of escape footbridge and evacuation lift. See Map CT-06-241a, G5 to D5, in SES2 and AP2 ES, Volume 2 CA5 Map Book.
- 2.2.69 Track modifications, signalling and other associated rail systems modifications will be undertaken at the WCML tracks at the south end of Crewe Station, between the extension of platform 5 and the southern end of platform 6, 250m in length. See Map CT-06-240, H5 to A5 and CT-06-241a, G5 to F5, in SES2 and AP2 ES, Volume 2 CA5 Map Book.
- 2.2.70 Modifications to the signalling works will be provided, over a length of 2km, between the south end of platform 5 and the A500 Shavington Bypass. Relocation of existing railway systems assets and new assets within the railway corridor are required, including equipment cabinets and distribution network operator cabinets, located adjacent to the WCML. An existing equipment building will be repositioned at the end of platform 12, 20m west of the southern end of the extended platform 5. See Map CT-06-240, H5 to A5 and CT-06-241a, J5 to C5, in SES2 and AP2 ES, Volume 2 CA5 Map Book.

⁶ Network Rail, working closely with the Department for Transport (DfT), CEC and other stakeholders, are in the process of developing proposals for an enhanced transport hub at Crewe ('Crewe Hub'). Crewe Hub does not form part of the HS2 Phase 2a scheme and this assessment does not include an assessment of the effects arising from Crewe Hub.

- 2.2.71 This SES2 design change will be constructed over a period of one year and nine months commencing in 2024. Works will be managed from the Motorail Terminal main compound and Tommy's Lane satellite compound. The duration of Motorail Terminal main compound will be extended by two years and three months in comparison to the main ES. The duration of Tommy's Lane satellite compound will be extended by three years and three months in comparison to the main ES. Both compounds will be operational for a total period of four years and nine months, commencing in 2021.

Topics to be included in the AP assessment

- 2.2.72 This SES2 design change is not considered to require reassessment of the environmental effects or mitigation as set out in the main ES as amended by SES1 and SES2 with respect to any environmental topics.

2.3 Corrections to the main ES

- 2.3.1 Since submission of the main ES, the need for a number of corrections to the contents of the main ES has been identified. Table 3 provides a list of the instances where it has been necessary to correct the Volume 2 Community area report for the South Cheshire area because of the potential to alter the significant environmental effects reported in the main ES or a factual inaccuracy relating to a significant effect that has been identified. Table 3 also clarifies elements of the scheme description reported in the main ES. The table gives the location of the text that is subject to the correction in the main ES, the reason for the correction, replicates the text from the main ES, where applicable provides revised text, and identifies whether the correction changes a significant effect reported in the main ES. Where relevant, these corrections have been taken into account in the technical assessments contained within Section 3 of this SES2.

Table 3: Summary of corrections to the main ES and SES1 in the South Cheshire area

Reference in the main ES	Reason for correction	Text in the main ES	Revised text	Change to significant effects and mitigation
<p>Overview of the area and description of the Proposed Scheme</p> <p>Paragraph 2.2.51, paragraph 2.3.137 and Table 6, Volume 2, CA5 of the main ES</p>	<p>Three Network Rail outbuildings, adjacent to Weston Lane, (west of the WCML) were reported as being demolished in in the main ES. These outbuildings will be retained.</p>	<p>Paragraph 2.2.51</p> <p>Demolition of five commercial and business properties (including farm outbuildings) and four other structures will be required to construct the permanent features in the South Cheshire area.</p> <p>Paragraph 2.3.137</p> <p>Demolition of three commercial buildings and one structure will be required as a result of the works to be managed from this compound, as described in Table 6.</p> <p>Table 6, 1st entry</p> <p>Description – Three single storey outbuildings associated with Network Rail infrastructure</p> <p>Location – West of the WCML, 100m south-east of Basford Farm, Weston Lane</p> <p>Feature resulting in the demolition – Basford Hall Southbound satellite compound.</p>	<p>Paragraph 2.2.51:</p> <p>Demolition of <i>two</i> commercial and business properties (including farm outbuildings) and four other structures will be required to construct the permanent features in the South Cheshire area.</p> <p>Paragraph 2.3.137</p> <p>Demolition of <i>one structure</i> will be required as a result of the works to be managed from this compound, as described in Table 6.</p> <p>Table 6, 1st entry</p> <p><i>Entry row removed with no replacement text.</i></p>	<p>No change.</p> <p>The change in number of demolitions does not affect the assessment.</p>
<p>Traffic and transport</p> <p>Paragraph 14.4.25, Volume 2, CA5 of the main ES.</p>	<p>Checkley cum Wrinehill Footpath 8 diversion was reported in the main ES as a permanent minor adverse significant effect as a result of an increase in distance of up to 400m. No effect was reported during construction in the main ES. However, the Checkley cum Wrinehill Footpath 8 diversion has a marginally different alignment during construction compared to operation and therefore a temporary minor adverse significant severance effect during construction should also have been reported.</p>	<p>Paragraph 14.4.25, no text exists within the main ES for this correction</p>	<p>Paragraph 14.4.25, second bullet</p> <p>Checkley cum Wrinehill Footpath 8 – minor adverse effect from increase in distance of up to 450m;</p>	<p>Yes.</p> <p>Minor adverse severance effect for non-motorised users due to temporary public rights of way (PRoW) diversion.</p>

3 Assessment of SES2 changes in the South Cheshire area

3.1 Introduction

3.1.1 Section 3 reports the assessment for community; ecology and biodiversity; landscape and visual; and sound, noise and vibration as a result of the SES2 changes.

3.2 Community

Introduction

3.2.1 The environmental baseline relevant to the community assessment is described below. Any new or different likely significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES.

Scope, assumptions and limitations

3.2.2 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the Scope and Methodology Report (SMR)⁷ and SMR Addendum⁸ of the main ES.

3.2.3 The SES2 changes of relevance to this assessment have the potential to result in new or different significant temporary construction and operational effects for community. Therefore, both construction and operational phases are considered in the assessment.

SES2 changes of relevance to this assessment

3.2.4 The following SES2 changes are considered in this assessment:

- changes to the construction programme; and
- Reconfiguration of the existing West Coast Main Line tracks between Madeley Bridleway 2 and A500 Shavington Bypass and provision of a new railway systems compound (SES2-005-001).

Environmental baseline

Existing baseline

3.2.5 The baseline community information for the South Cheshire area is as described in Volume 2, CA5, Section 6 of the main ES.

⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 3.2.6 Between the settlements of Wrinehill and Blakenhall are a number of sparsely located, detached rural farm properties along Den Lane and Checkley Lane. Mill Lane End comprises 12 properties at the junction of Den Lane and Mill Lane.
- 3.2.7 Chorlton is a village approximately 6km south-east of Crewe, largely comprising a modern housing estate at Wychwood Park. To the west of Wychwood Park are a number of older residential properties, which are accessed via Chorlton Lane, a narrow no through road.

Future baseline

Construction (2020) and operation (2027)

- 3.2.8 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 3.2.9 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁹ are required.

Assessment of impacts and effects

- 3.2.10 The main ES reported that approximately seven properties on Checkley Lane would experience significant temporary adverse visual effects due to construction works. The main ES further reported that six of these properties would experience a significant temporary increase in heavy goods vehicles (HGVs) and four of the properties would experience a significant noise effect. The in-combination effect would result in a temporary major adverse significant effect at the seven properties.
- 3.2.11 The changes to the construction programme will result in an increased duration of noise effects on four properties on Checkley Lane, primarily associated with construction of earthworks. This will increase the overall duration of the in-combination effect on these properties from up to one year and eight months, as reported in the main ES, to up to one year and nine months. This will give rise to a different in-combination effect, however this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-000 and Map Series CM-01 in the SES2 and AP2 ES Volume 5: Community Map Book.

Other mitigation measures

- 3.2.12 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Summary of likely residual significant effects

- 3.2.13 The changes to the construction programme will give rise to a different likely residual temporary significant effect, due to an increase in the duration of the significant in-combination effect on properties on Checkley Lane, which is due to the increased duration of noise effects. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 3.2.14 There are no new or different likely significant cumulative effects for community as a result of the SES2 changes acting in combination with other SES2 changes or AP1 amendments.

Effects arising during operation

Avoidance and mitigation measures

- 3.2.15 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 3.2.16 The main ES reported that approximately 38 properties in Wychwood Park and Chorlton would experience significant permanent adverse visual effects due to views of the scheme in operation. The main ES further reported that all of these properties would experience significant noise effects. The in-combination effect would result in a permanent major adverse significant effect at the 38 properties.
- 3.2.17 The reconfiguration of the existing West Coast Main Line (WCML) tracks between the A500 Shavington Bypass and Madeley Bridleway 2 and provision of a new railway systems compound (SES2-005-001) will give rise to a different significant effect by reducing the number of properties in Wychwood Park and Chorlton which will be subject to a significant in-combination effect. This will result in 23 fewer properties being subject to a significant noise effect, reducing the overall number of properties subject to a significant in-combination effect. This will reduce the effect reported in the main ES from 38 properties to 15 properties. However, this will not change the level of significance of the effect reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-000 and Map Series CM-01 in the SES2 and AP2 ES Volume 5: Community Map Book.

Other mitigation measures

- 3.2.18 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 3.2.19 The reconfiguration of the existing WCML tracks between A500 Shavington Bypass and Madeley Bridleway 2 and provision of a new railway systems compound will give rise to a different likely residual permanent significant effect, due to a reduction in the number of properties in Wychwood Park and Chorlton subject to a significant in-combination effect from noise and visual effects. However, this will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 3.2.20 There are no new or different likely significant cumulative effects for community as a result of the SES2 changes acting in combination with other SES2 changes or AP1 amendments.

Monitoring

- 3.2.21 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.2.22 There are no changes to the monitoring requirements identified in the main ES for community as a result of the SES2 changes.

3.3 Ecology and biodiversity

Introduction

- 3.3.1 The environmental baseline relevant to the ecology and biodiversity assessment is described below. Any new or different likely significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES as amended by SES1.

Scope, assumptions and limitations

- 3.3.2 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report¹⁰ (SMR) and SMR Addendum¹¹ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES: Volume 5: Appendix CT-001-000).
- 3.3.3 The SES2 changes of relevance to this assessment are those that have the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 3.3.4 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst-case' basis for the subsequent assessment.
- 3.3.5 The precautionary approach to the assessment that has been adopted identifies the likely significant ecological effects of the SES2 scheme.

SES2 changes of relevance to this assessment

- 3.3.6 The following SES2 changes are considered in this assessment:
- new baseline information on habitats resulting from additional Phase 1 habitat surveys;

¹⁰HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹¹HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- new baseline information on designated nature conservation sites; and
- amendment to the environmental mitigation around Half Moon inverted siphon (SES2-005-002).

Environmental baseline

Existing baseline

- 3.3.7 The ecological baseline for the assessment takes into account baseline information collected in support of the main ES and SES1, which included field survey data, aerial photography and relevant existing information gathered from national organisations and from regional and local sources. A full list of data sources that informed the assessment in this area is provided in Volume 2, CA5, Section 8 of the main ES. The assessment also takes into account additional desk study and survey information that is reported in BID document EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12¹², which accompanies the SES1 and AP1 ES.
- 3.3.8 Details of the Phase 1 habitat surveys completed since the production of SES1 are provided in BID document BID-EC-019-000 and Map Series EC-02 which accompanies the SES2 and AP2 ES. Details of the designated nature conservation sites are provided in SES2 and AP2 ES Volume 5: Appendix EC-001-000, including Map Series EC-01.

Designated sites

- 3.3.9 Since the production of the SES1 and AP1 ES, Randilow and Bunker Hill has been designated as a Local Wildlife Site (LWS) (Randilow and Bunker Hill LWS). The LWS covers an area of approximately 105.2ha and comprises a number of habitat types including arable land, water bodies, semi-improved neutral grassland, marshy grassland, hedgerows, lowland mixed deciduous woodland and wet woodland. The site is also considered to support an important breeding farmland bird assemblage, seven species of bats, and great crested newts. The constituent habitats within the LWS were reported in the main ES. A high proportion of the site is currently managed under an environmental stewardship agreement. Randilow and Bunker Hill LWS is located to the south of Den Lane and north of Checkley Lane, partially within the land required for the original scheme. The LWS is of county value.
- 3.3.10 Since the production of the SES1 and AP1 ES, the extent of the area designated as Basford Brook LWS has been reduced from approximately 12.7ha to 4.3ha. This site was reported in the main ES and valued at the county level. The LWS comprises marshy grassland, woodland and scrub immediately adjacent to parts of Basford Brook. Basford Brook LWS passes under the West Coast Main Line (WCML) south of Crewe and then runs parallel and to the east of the WCML, under the A500 Shavington Bypass and Newcastle Road. The LWS is partially within the land required for the original scheme. The LWS is of county value.

¹²HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Ecology Map Book. Available online at:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692669/G35_Ecological_baseline_data_map_book.pdf

Habitats

- 3.3.11 The main ES, as amended by SES1, reported the presence of marshy grassland and semi-improved neutral grassland to the west of Chorlton Lane. The grassland was valued at local/parish level in the main ES. New baseline information from the additional Phase 1 habitat surveys has confirmed that this is an area of semi-improved neutral grassland, with Yorkshire fog, creeping bent, red fescue, common knapweed, oxeye daisy, ribwort plantain and creeping buttercup. The semi-improved neutral grassland is likely to qualify as lowland meadow, a habitat of principal importance listed under the provisions of Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)¹³ and a conservation priority of the Cheshire Biodiversity Action Plan¹⁴ (BAP). The grassland habitat is of district/borough value.
- 3.3.12 Habitats within the land required for the environmental mitigation around Half Moon inverted siphon (SES2-005-002) include improved grassland, arable land, species-poor hedgerows with standard trees and a watercourse. The watercourse, Swill Brook, and an associated drain, north of Gonsley Green Farm, support bankside vegetation including invasive Himalayan balsam, reed canary grass, branched bur-reed and soft rush. These habitats are of local/parish value.

Species

- 3.3.13 The main ES reported the likely presence of water vole populations in Swill Brook, associated drains and other water bodies which are adjacent to the land required for the environmental mitigation around Half Moon inverted siphon (SES2-005-002). New baseline information from additional water vole surveys has confirmed their presence in this area. Populations of water vole using Swill Brook and associated features are of up to county value.
- 3.3.14 The main ES reported populations of mammals including polecat, harvest mouse, European hedgehog and brown hare, identified through desk records, as being potentially present throughout the South Cheshire area. These species are of relevance to the assessment of the environmental mitigation around Half Moon inverted siphon (SES2-005-002). If present, these populations are of local/parish value.

Future baseline

Construction (2020)

- 3.3.15 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

¹³ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

¹⁴ Cheshire Wildlife Trust, (2007), *Biodiversity Action Plans for Priority Species and Habitats in Cheshire*. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/BAP%2olist%20-%20updated%20April%202011.pdf>

Effects arising during construction

Avoidance and mitigation measures

3.3.16 The assessment assumes implementation of the measures set out within the draft Code of Construction Practice (CoCP)¹⁵.

3.3.17 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Assessment of impacts and effects

3.3.18 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

3.3.19 The main ES reported the loss of 58.3ha of habitats, including arable, grassland and woodland, which now fall within the boundary of Randilow and Bunker Hill LWS. The LWS was designated after the production of SES1 and AP1 ES. Approximately 55% of the area now designated as an LWS will be lost due to construction of the original scheme. This represents a new permanent adverse effect on the structure and function of Randilow and Bunker LWS that is significant at the county level.

3.3.20 The main ES reported the loss of 0.1ha (0.8%) of riparian habitat at Basford Brook LWS for the construction of the original scheme. This riparian habitat contributes to the reason for the LWS designation and its loss was reported in the main ES as a permanent adverse effect on the structure and integrity of the site that is significant at the local/parish level. Following the reduction in extent of the LWS, the loss of the habitat within the LWS will remain at 0.1ha but will increase to 2.3% of the LWS. This will not give rise to new or different significant effects on Basford Brook LWS and will not change the level of significance of the effects reported in the main ES.

Habitats

3.3.21 The main ES reported the loss of 3.6ha of semi-improved neutral grassland to the west of Chorlton Lane and to the south of Jubilee Farm, which would result in a permanent adverse effect at the local/parish level. New baseline information from the additional Phase 1 habitat surveys has confirmed that this is an area of semi-improved neutral grassland, with Yorkshire fog, creeping bent, red fescue, common knapweed, oxeye daisy, ribwort plantain and creeping buttercup. The grassland is likely to qualify as lowland meadow, a habitat of principal importance and a conservation priority of the Cheshire BAP. The value of this grassland habitat has been reassessed and will result in a new permanent adverse effect on lowland meadow that is significant at district/borough level.

3.3.22 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the SES2 design changes. Additional local/parish level effects arising from the SES2 scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

¹⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Species

- 3.3.23 The main ES, as amended by SES₁, reported the presence of water vole populations in Swill Brook, associated drains and other water bodies, adjacent to the location of the Half Moon inverted siphon. It is considered that water voles are therefore likely to be present within the watercourse on both sides (to the east and west) of the HS₂ route and that their ability to move between these areas would be impacted as a result of construction of the original scheme. The main ES reported that dry tunnels or mammal ledges would be provided for all impacted watercourses where species such as water vole were known or likely to be present, to ensure that fragmentation of occupied habitats and barriers to their dispersal would not occur. However, a dry tunnel or mammal ledge would not be achievable in this location due to the depth that would be required to pass beneath the HS₂ route, while also maintaining required gradients on both sides for a ramp. Areas adjacent to the siphon are also heavily constrained by other permanent infrastructure. Therefore, in the absence of mitigation, the Half Moon inverted siphon would give rise to a new adverse effect on the water vole populations in Swill Brook that is significant at up to the county level.
- 3.3.24 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the SES₂ design changes. Additional local/parish level effects arising from the SES₂ scheme are listed in SES₂ and AP₂ ES Volume 5: Appendix EC-016-000.

Other mitigation measures

- 3.3.25 The main ES reported habitat creation in various locations in the South Cheshire area including Checkley Lane, Lower Den Farm, Coppice Bank, Wychwood Park, Chorlton Lane, Burrow Coppice and Basford Hall. This includes the creation of ponds, species-rich grassland, hedgerows and broadleaved woodland, to compensate for the loss of habitats and potential displacement of species associated with Randilow and Bunker Hill LWS. These habitat creation areas, once established, will reduce the adverse effects resulting from the SES changes on the habitats of the LWS to a level that is not significant.
- 3.3.26 The main ES reported the creation of 4.4ha of species-rich grassland south-east of Heath Farm, to compensate for the loss of marshy grassland and semi-improved neutral grassland to the west of Chorlton Lane. Once established, the provision of new species-rich grassland will reduce adverse effects resulting from the SES₂ changes on semi-improved neutral grassland to the west of Chorlton Lane and to the south of Jubilee Farm to a level that is not significant.
- 3.3.27 The amendment to the environmental mitigation around Half Moon inverted siphon (SES₂-005-002) will provide suitable habitat to sustain water vole populations through enhancing the habitats in the area on both sides of the HS₂ route, thereby increasing their carrying capacity for water vole. These mitigation measures include the:
- provision of 250m of new ditch creation, additional lengths of ditch habitat and associated wetland planting;
 - provision of 1km of ditch enhancement, realignment of Swill Brook and associated drains (particularly where canalised), re-shelving of edges and wetland planting;

- provision of six new ponds and associated wetland planting;
- replacement of approximately 1.5ha of woodland creation alongside Swill Brook, included in the original scheme, with grassland creation to retain open riparian habitats and prevent future shading; and
- replacement of approximately 1.5ha of grassland habitat creation, included in the original scheme, with woodland habitat creation to diversify the mosaic of habitats present.

3.3.28 The above listed mitigation will reduce the new adverse significant effect on the water vole population in Swill Brook to a level that is not significant.

Summary of likely residual significant effects

3.3.29 With the implementation of the mitigation proposed, the ecological effects are reduced to a level where they are not considered to be significant. The significant effects of the SES2 scheme in this area are therefore unchanged from those reported in the main ES, as amended by SES1.

Cumulative effects

3.3.30 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the SES2 changes acting in combination with any other SES2 changes or AP1 amendments.

3.4 Landscape and visual

Introduction

3.4.1 The environmental baseline relevant to the landscape and visual assessment is described below. Any new or different significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES.

Scope, assumptions and limitations

3.4.2 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the Scope and Methodology Report (SMR)¹⁶ and SMR Addendum¹⁷ of the main ES.

3.4.3 The SES2 design changes of relevance to this assessment have the potential to give rise to new or different significant operational visual effects only. Therefore, there is no operational assessment for landscape and no construction assessment for landscape and visual.

¹⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

¹⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

SES2 changes of relevance to this assessment

3.4.4 The following SES2 design changes are considered in this assessment:

- relocation of the South Crewe auto transformer station (SES2-005-004); and
- local placement of surplus excavated material to the east of the Casey Lane diversion (SES2-005-006).

Environmental baseline

Existing baseline

3.4.5 The baseline landscape and visual information for the South Cheshire area is as described in Volume 2, CA5, Section 11 of the main ES.

Visual baseline

3.4.6 The SES2 design changes to relocate the South Crewe auto-transformer station has the potential to affect one viewpoint (025.02.013) and the change to introduce local placement of surplus excavated material to the east of Casey Lane also has the potential to affect one viewpoint (027.03.019). These are described in Volume 5: Appendix LV-001-005 of the main ES and summarised below.

View north-east from Gonsley Green Farm (viewpoint 025.02.013)

3.4.7 Residents of Gonsley Green Farm and users of Blakenhall Bridleway 12 and Blakenhall Footpath 7 have close and middle-distance views across flat pastures bounded by post and rail fences. These give way to long distance views of low rolling hills with a generous covering of trees and woodlands. In the middle distance, moving trains and the overhead line equipment associated with the West Coast Main Line (WCML), which runs partly in cutting, are intermittently visible between the trees. A single wind turbine and pylons are skyline features.

View west from farmland east of Casey Lane (viewpoint 027.03.019)

3.4.8 Users of Basford Footpath 3 have views across flat or gently undulating medium to large-scale arable fields and pastures bounded by hedgerows with only occasional hedgerow trees. The farmland is relatively featureless and displays evidence of field amalgamation and hedgerow loss. There are long distance views towards Casey Lane overbridge, the overhead line equipment associated with the WCML and a wooden pole supported overhead line. A small group of trees next to Casey Lane, a wooden pole supported overhead line and Basford Hall sidings lighting columns are seen on the skyline.

Future baseline

Operation (2027)

3.4.9 The future baseline for operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Permanent effects arising during operation

Avoidance and mitigation measures

- 3.4.10 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

View north-east from Gonsley Green Farm (viewpoint 025.02.013)

- 3.4.11 The main ES reported a major adverse significant effect at year 1, reducing to a moderate adverse significant effect at year 15 and year 60. This was due to the South Crewe mid-point auto-transformer station and access track and the proximity of newly planted landscape earthworks. Whilst the lower parts of the Chorlton South embankment would be screened by the landscape earthworks, the upper parts would be apparent. Above and beyond the landscape earthworks, the overhead line equipment and moving trains on the Chorlton South embankment would extend across most of the view to the east. South of the landscape earthworks, Blakenhall viaduct would also be visible. The new features in the view, combined with changes to the landform and loss of existing landscape features, including hedgerows and mature trees, would intensify the visual effect of the WCML and substantially change the current rural outlook across arable fields and pastures. To the rear of Gonsley Green Farm, the existing duck pond would be reduced in size and the north side of the landscape earthworks would define new skyline views. At year 15, the extensive maturing mitigation planting would screen views of the operational railway and provide some integration of the landscape earthworks into its surroundings. The outlook would change from relatively open fields to developing woodland but it would remain rural in context. Views of moving trains and the overhead line equipment would be screened by the maturing vegetation. However, a sense of severance and loss of distant views, caused by the proximity of the wooded embankment, would remain.
- 3.4.12 The SES2 design change (SES2-005-004) will relocate the South Crewe auto-transformer station and replace it with an auto-transformer station in a new location approximately 115m further away from Gonsley Green Farm. The landscape earthworks proposed in the original scheme will be realigned, with woodland planting added to screen and integrate the auto-transformer station into the surrounding landscape. At year 1, the effect of these changes will be to slightly reduce the effect on views from Gonsley Green Farm as the new auto-transformer station will be further from the farm than the original South Crewe mid-point auto-transformer station. The realigned landscape earthworks will provide screening of the auto-transformer station, which will further improve the outlook from the property at Gonsley Green Farm. The landscape earthworks themselves will be an uncharacteristic foreground feature at year 1 and the upper parts of the Chorlton South embankment, the overhead line equipment and moving trains will remain very noticeable. The SES2 design change will therefore give rise to a different significant effect at viewpoint 025.02.013 at year 1. However, the level of significance of effect will remain major adverse significant as reported in the main ES.
- 3.4.13 At year 15 and year 60, the maturing woodland mitigation planting on top of the landscape earthworks, will provide substantial screening of the auto-transformer

station and operational railway, including the upper parts of Chorlton South embankment. The views from Gonsley Green Farm will change from relatively open fields to developing woodland, but it will remain rural in context. Views of the overhead line equipment and moving trains will be screened by the maturing vegetation, but the sense of severance and loss of distant views, caused by the proximity of the wooded embankment, will remain. The SES2 design change will therefore give rise to a different significant effect at viewpoint 025.02.013. However, the level of significance of effect will remain moderate adverse significant as reported in the main ES.

- 3.4.14 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-005 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

View west from farmland east of Casey Lane (viewpoint 027.03.019)

- 3.4.15 The main ES reported a moderate adverse significant effect at year 1 of operation, reducing to minor adverse non-significant effect at year 15 and year 60. This was due to the presence of the diverted section of Casey Lane in close distance views, and distant views of the realigned section of Newcastle Road within the rural farmland. The proposed Casey Lane diversion would be an uncharacteristic feature and would interrupt views across the arable farmland. At year 15, however, the maturing mitigation planting along the diverted section of road would partially screen and filter views and provide some integration of the road within the wider landscape. The outlook would change from relatively open fields to developing woodland, but it would remain rural in context.
- 3.4.16 At year 1, the SES2 design change to locally place surplus excavated material to the east of the Casey Lane diversion (SES2-005-006) will provide a permanent earthwork up to 3m high. Whilst in itself an engineered landform, this will partially screen the diverted section of Casey Lane. This will slightly reduce the effect on close distance views from the footpath, as the new single road carriageway and most of the associated infrastructure will be obscured from the view. The local placement area will also screen the lower parts of the realigned section of Newcastle Road, although the Newcastle Road overbridge and upper parts of the bridge embankments will remain visible and continue to affect middle and long-distance views. The SES2 design change will therefore give rise to a different significant effect at viewpoint 027.03.019 at year 1. However, the level of significance of effect will remain moderate adverse significant as reported in the main ES. At year 15 and year 60 the level of significance of effect will remain non-significant as reported in the main ES.
- 3.4.17 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-005.

Other mitigation measures

- 3.4.18 No mitigation measures, additional to those reported in the main ES, are required.

Summary of likely residual significant effects

- 3.4.19 The SES2 design change to relocate the South Crewe mid-point auto-transformer station will give rise to a different likely residual significant operational visual effect on views north-east from Gonsley Green Farm (viewpoint 025.02.013). The effect will reduce, but will remain moderate adverse significant at year 15 and year 60. This will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 3.4.20 There are no new or different significant cumulative effects for landscape or visual receptors as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.4.21 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.4.22 There are no changes to the monitoring requirements identified in the main ES for landscape and visual as a result of the SES2 design changes.

3.5 Sound, noise and vibration

Introduction

- 3.5.1 The environmental baseline relevant to the sound, noise and vibration is described below. Any new or different likely significant environmental effects as a result of the changes introduced in Section 2 are then identified, compared to those reported in the main ES, as amended by SES1.

Scope, assumptions and limitations

- 3.5.2 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the Scope and Methodology Report (SMR)¹⁸ of the main ES.
- 3.5.3 The SES2 changes of relevance to this assessment have the potential to result in new or different significant construction and operational effects for sound, noise and vibration. Therefore, both construction and operational phases are considered in the assessment.

SES2 changes of relevance to this assessment

- 3.5.4 The SES2 changes to the construction programme, and to reconfigure the existing West Coast Main Line (WCML) tracks between Madeley Bridleway 2 and A500 Shavington Bypass and provision of a new railway systems compound (SES2-005-001) are considered in this assessment.

Environmental baseline

Existing baseline

- 3.5.5 The baseline sound, noise and vibration information for the South Cheshire area is described in Volume 2, CA5, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by the SES2 changes have been used in the construction and operational assessments.

¹⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 3.5.6 The area in the vicinity of the SES2 design change (SES2-005-001) includes the communities close to Lane End Farm, Chorlton and Wychwood Park. The existing baseline in this area is dominated by traffic noise from local and distant road traffic, including the A500 Shavington Bypass, A531 Newcastle Road and Chorlton Lane, and the WCML.

Future baseline

Construction (2020) and operation (2027)

- 3.5.7 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 3.5.8 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)¹⁹ are required.

Assessment of impacts and effects

- 3.5.9 The main ES and SES1 reported the likely significant sound, noise or vibration effects in the South Cheshire area. An assessment has been undertaken to determine whether construction noise and vibration associated with the SES2 changes will result in a new or different likely significant effect at any properties, using the significance criteria detailed in the main ES, Volume 5: Appendix SV-001-000.
- 3.5.10 Where the assessment identifies receptors subject to change in effect and therefore a potential new or different likely significant effect, the relevant construction noise results are presented in SES2 and AP2 ES Volume 5: Appendix SV-002-000. The nature of construction noise is that, for a given receptor, there may be contributions from a number of SES2 changes, and/or those works assessed in the main ES as amended by SES1. Where practicable, the contribution of the specific SES2 changes has been identified.
- 3.5.11 The assessment has considered the construction noise and vibration levels associated with the SES2 changes and those identified in the main ES, the construction programme for the SES2 changes and local mitigation identified in the main ES.
- 3.5.12 The SES2 changes will not give rise to any new or different likely residual significant effects to those reported in the main ES. For further information, see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Cumulative effects

- 3.5.13 There are no new or different significant cumulative effects for sound, noise and vibration as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

¹⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Effects arising during operation

Avoidance and mitigation measures

- 3.5.14 No avoidance or mitigation measures additional to those reported in the main ES are required.

Assessment of impacts and effects

- 3.5.15 The main ES identified a likely significant operational airborne noise effect on a community basis at approximately 45 residential properties at Wychwood Park/Chorlton in the vicinity of Chiltern Close, Freshwater Drive, Henley Road and St Clements Court. This was denoted as OSV05-Co5 in Table 33 of the Volume 2, Community area report CA5, in Volume 5: Appendix SV-002-005 and Volume 2 Map Series SV-05 in the main ES.
- 3.5.16 The SES2 design change (SES2-005-001) will relocate one of the existing WCML lines away from the community at Wychwood Park/Chorlton resulting in a reduction in operational airborne noise levels from the trains currently operating on these lines. This will reduce the number of residential properties subject to the significant operational noise effect at Wychwood Park/Chorlton to approximately 20²⁰. This results in a different likely significant operational noise effect on a community basis at Wychwood Park/Chorlton, in the vicinity of Chiltern Close, Henley Road and St Clements Court. For further information see SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Other mitigation measures

- 3.5.17 No mitigation measures additional to those reported in the main ES are required.

Summary of likely residual significant effects

- 3.5.18 The SES2 design change will give rise to a different likely residual significant effect on a community basis at Wychwood Park/Chorlton, by reducing the number of properties affected from approximately 45 to approximately 20 in the vicinity of Chiltern Close, Freshwater Drive, Henley Road and St Clements Court.

Cumulative effects

- 3.5.19 There are no new or different significant cumulative effects for sound, noise and vibration as a result of the SES2 changes relevant to this assessment acting in combination with any other SES2 changes or AP1 amendments.

Monitoring

- 3.5.20 Volume 1 of the main ES sets out the general approach to environmental monitoring during operation of the original scheme.
- 3.5.21 There are no changes to the monitoring requirements identified in the main ES for sound, noise and vibration as a result of the amendment.

²⁰ The sound, noise and vibration assessment rounds number of properties to the nearest five, e.g. 15 is rounded to 20, whereas the community assessment counts absolute numbers of properties.

3.6 Summary of new or different likely residual significant effects as a result of the SES2 changes

- 3.6.1 A correction to the content of the main ES has identified a temporary minor adverse significant severance effect on the non-motorised users of the Checkley cum Wrinehill Footpath 8 which was omitted from the main ES. Checkley cum Wrinehill Footpath 8 will be diverted during construction.
- 3.6.2 Changes to the construction programme will give rise to a different likely residual temporary significant effect, due to an increase in the duration of the significant in-combination effect on properties on Checkley Lane. However, this will not change the level of significance of the effects reported in the main ES.
- 3.6.3 In addition, the SES2 design change to reconfigure the existing WCML tracks between Madeley Bridleway 2 and A500 Shavington Bypass and provision of a new railway systems compound (SES2-005-001) will give rise to a different likely residual permanent significant effect, due to a reduction in the number of properties in Wychwood Park and Chorlton subject to a significant in-combination effect. However, this will not change the level of significance of the effects reported in the main ES.
- 3.6.4 The SES2 design change to relocate the South Crewe mid-point auto-transformer station (SES2-005-004) will give rise to a different likely residual significant operational visual effect at viewpoint 025.02.013. However, this will not change the level of significance of the effects reported in the main ES.
- 3.6.5 Changes to the construction programme and the SES2 design change to reconfigure the existing WCML tracks between A500 Shavington Bypass and Madeley Bridleway 2 and provision of a new railway systems compound (SES2-005-001) will result in a different likely residual significant operational noise effect on a community basis at Wychwood Park/Chorlton, in the vicinity of Chiltern Close, Freshwater Drive, Henley Road and St Clements Court.

Part 2: Additional Provision 2 Environmental Statement

4 Summary of AP2 amendments in the South Cheshire area

4.1 Introduction

4.1.1 In the South Cheshire area, the following types of amendments are proposed in the AP2 revised scheme:

- engineering amendments; and
- minor utility amendments.

4.1.2 All dimensions in the following sections are approximate.

4.2 Engineering amendments

4.2.1 Engineering amendments will be required in the South Cheshire area that will result in changes to the land or Bill powers required for the SES2 scheme and separately the AP1 revised scheme where relevant. Table 4 provides a summary of the engineering amendments. Figure 5 shows the locations of the engineering amendments.

Table 4: Summary of AP2 engineering amendments in the South Cheshire area

Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant).	Description of the AP2 revised scheme
<p>Additional land required for a construction traffic route at the A500 Shavington Bypass</p> <p>AP2-005-001</p> <p>Map CT-05-235, I7 to H7 and E8 to E7, Map CT-05-236, H6, Map CT-05-239 H6 to G6, and C6 to B8 and Map CT-05-240-L1, H2 to G6 in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Heavy goods vehicle (HGV) construction traffic would be directed along the minor local roads of Den Lane, Wrinehill Road and Checkley Lane during construction of the original scheme</p>	<p>Additional land will be required temporarily to provide HGV access onto the A500 Shavington Bypass, from the Basford cutting main compound, and to avoid the minor local roads of Den Lane, Wrinehill Road and Checkley Lane, and passing the Wybunbury Delves Church of England primary school.</p> <p>Additional land will also be required to provide separation of public road-going construction traffic (e.g. HGVs and light goods vehicles (LGVs) from large earth moving equipment on site.</p>
<p>Additional land and a change to Bill powers for a fuel pipeline diversion and new utility compound at Checkley Lane</p> <p>AP2-005-002</p> <p>Map CT-06-235, F8 to A5, CT-06-236 J5 to B1, and CT-06-236-R1, C10 to B9 and Map CT-05-235, F8 to A5, CT-05-236, J5 to B1, and CT-05-236-R1, C10 to B9, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>No provision was made in the Bill.</p>	<p>Additional land and a change to Bill powers will be required to divert a 2.3km section of a Mainline Pipelines Ltd 12-inch diameter fuel pipeline crossing under the HS2 route, Den Lane and Blakenhall Bridleway 8. To accommodate the fuel pipeline diversion, Blakenhall Bridleway 8 will be realigned and the footprint of the borrow pit north of Checkley Lane included in the original scheme will be reduced.</p> <p>Additional land will be temporarily required for a new utility compound, Checkley Lane utility compound,</p>

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Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant).	Description of the AP2 revised scheme
		adjacent to and to the north of Checkley Lane to manage the works set out in this amendment.
<p>Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132kv overhead line at Checkley Lane and a utility compound</p> <p>AP2-005-003</p> <p>Map CT-06-235, E2 to A8, and CT-06-236, J2 to C10; and Map CT-05-235, E2 to A8 and CT-05-236, J2 to C10 in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>An 860m section of a Scottish Power Energy Networks 132kV overhead line would be raised, to cross over the HS2 route in an east to west direction, 1km north of the Checkley Lane overbridge.</p> <p>Three temporary material stockpile areas would be provided on the south-west side of Blakenhall Northbound Spur cutting.</p> <p>The works to divert the overhead line would be managed from the Blakenhall Northbound Spur embankment satellite compound.</p>	<p>Additional land will be required, and a change in Bill powers, for a revised permanent diversion of the Scottish Power Energy Networks 132kV overhead line. Additional land will also be temporarily required during construction of the diversion.</p> <p>The overhead line will be diverted underground for a distance of 1.8km, crossing under the HS2 route to the north-west of the Checkley Lane overbridge. Four existing pylons will be removed.</p> <p>Two temporary material stockpile areas, south-west of Blakenhall Northbound Spur cutting proposed in the original scheme will be combined to form one new stockpile area, east of their previous location in the original scheme</p> <p>A new utility compound, Den Lane utility compound A, will be provided to the south of Den Lane to manage the works set out in this amendment and the works provided for in amendment AP2-005-009.</p>
<p>Additional land for the diversion of a National Grid 1050mm diameter high pressure gas pipeline and a new utility compound at Den Lane</p> <p>AP2-005-004</p> <p>Map CT-06-236, G7 to E7 and C4 to C3, Maps CT-06-236, G7 to E7 and C4 to C3, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Permanent diversion of an underground National Grid 1,050mm diameter high pressure gas pipeline, would be required which would cross beneath the HS2 route at Crewe South cutting.</p>	<p>Additional land will be required for a permanent revised diversion alignment of a section of the underground National Grid 1,050mm diameter high pressure gas pipeline at Crewe Central cutting.</p> <p>The diversion will cross beneath the HS2 route at two locations at Crewe South cutting.</p> <p>An area of grassland habitat creation and ecological mitigation ponds proposed in the original scheme will be reconfigured to accommodate the revised realignment of the pipeline.</p> <p>A new utility compound, Den Lane utility compound B, will be provided to the north-west of Den Lane central underbridge to manage the works set out in this amendment and the works provided for in amendment AP2-005-005.</p>

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Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant).	Description of the AP2 revised scheme
<p>Additional land for the diversion of a National Grid 900mm diameter high pressure gas pipeline at Den Lane</p> <p>AP2-005-005</p> <p>Map CT-06-236, G7 to C7 and D5 to C4 in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Permanent diversion of a 900mm diameter National Grid gas transmission pipeline for 850m beneath the HS2 route, 65m north of the Den Lane central underbridge would be required.</p> <p>The works would be managed from the Blakenhall Northbound Spur embankment satellite compound.</p>	<p>Additional land will be required for a permanent revised alignment of the diversion of the 900mm diameter National Grid gas transmission pipeline, to cross under the HS2 route 175m south-east of Den Lane central underbridge. The length of the diversion will be increased by 50m to a total length of 900m.</p> <p>The works will be managed from a new utility compound, Den Lane utility compound B, provided for in AP2-005-004 (Additional land for the diversion of a National Grid 1050mm diameter high pressure gas pipeline and a new utility compound at Den Lane)</p>
<p>Additional land and a change to Bill powers for a new access to Lower Den Farm and the relocation of Den Lane Welfare satellite compound</p> <p>AP2-005-006</p> <p>Map CT-06-236-R1, G9 to C10 in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>The original scheme included the diversion of Blakenhall Bridleway 8 to cross over the West Coast Main Line (WCML), 75m north-west of its existing alignment, via Blakenhall Bridleway 8 accommodation overbridge. The existing Lower Den Farm accommodation overbridge would be demolished and access provided to Lower Den Farm via the realigned Blakenhall Bridleway 8 accommodation overbridge.</p> <p>The AP1 revised scheme included additional land for the permanent diversion of United Utilities water mains (AP1-005-102) and additional land for a new temporary Scottish Power Energy Networks power line (AP1-005-105).</p>	<p>Additional land and a change to Bill powers will be required for a new permanent agricultural access to Lower Den Farm from Den Lane and the relocation of Den Lane Welfare satellite compound.</p>
<p>Change in Bill powers for the realignment of the Blakenhall Bridleway 8 and associated accommodation overbridge</p> <p>AP2-005-007</p> <p>Map CT-06-236, C3 to B2, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Diversion of the combined accommodation access between HS2, Network Rail and the Blakenhall Bridleway would be required, 75m to the north-west of the existing alignment, crossing the existing WCML via the replacement Blakenhall Bridleway 8 accommodation overbridge, which would be relocated 63m to the west, and would lengthen the access to Lower Den Farm by 7m.</p> <p>Blakenhall New Bridleway and maintenance access road would be provided, to the south-west of the WCML, extending from Blakenhall Bridleway 8 accommodation overbridge to the Blakenhall Bridleway 12 east accommodation overbridge.</p>	<p>A change to Bill powers will be required to relocate the Blakenhall Bridleway 8 accommodation overbridge and realign the Blakenhall Bridleway 8 to avoid diverting an existing fuel pipeline below the WCML.</p> <p>Diversion of the shared accommodation access between HS2, Network Rail and Blakenhall New Bridleway will be amended to provide a diversion 61m west of the existing alignment. The Blakenhall Bridleway 8 accommodation overbridge will be relocated a further 49m to the west from the location in the original scheme, increasing journey length by 46m.</p>
<p>Additional land for material stockpile relocations at Lower Den Farm and the reorientation of Blakenhall cutting satellite compound</p> <p>AP2-005-008</p>	<p>Temporary stockpiles for the storage of surplus excavated materials, and the Blakenhall cutting satellite compound, to the east of the WCML, north-west of Lower Den Farm would be required.</p>	<p>Additional land will be required for the temporary relocation of two material stockpiles to the west of the WCML, and for the reorientation of Blakenhall cutting satellite compound to the east of the WCML.</p>

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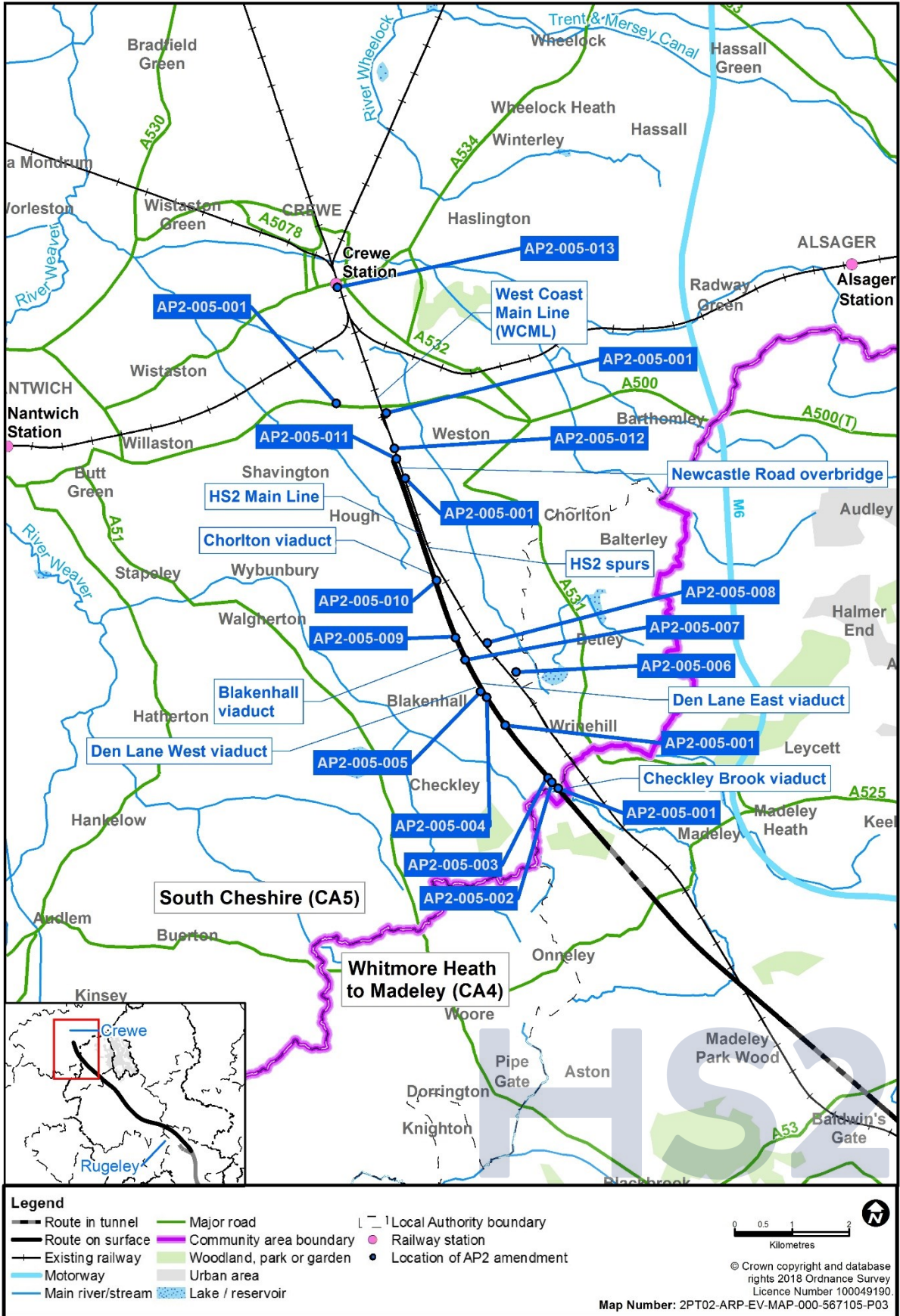
Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant).	Description of the AP2 revised scheme
<p>Map CT-05-236, C4 to B1, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>		
<p>Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132KV overhead line at Blakenhall</p> <p>AP2-005-009</p> <p>CT-06-237, I7 to H10 and G3 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>A 750m section of a Scottish Power Energy Networks 132kv overhead line would be provided, to cross over the HS2 route in a south to north direction 625m north of the Den Lane Central underbridge.</p> <p>The works would be managed from the Blakenhall Northbound Spur embankment satellite compound.</p>	<p>Additional land and a change in Bill powers will be required for a revised permanent diversion of the Scottish Power Energy Networks 132kV overhead line. The overhead line will be diverted underground for a distance of 2.3km, crossing under the HS2 route and WCML, west of Wrinehill Road and Mill Lane and reconnect to the existing overhead line to the east of the WCML. Two existing pylons will be removed.</p> <p>There will be a reduction of 530m² in the area of grassland habitat and a reduction of 55m in hedgerow habitat in comparison to the original scheme.</p> <p>The works will be managed from a new utility compound, Den Lane utility compound A, provided for in AP2-005-003 (Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132kv overhead line at Checkley Lane and a utility compound).</p>
<p>Additional land required to improve visibility for traffic using the junction of Wrinehill Road and an accommodation track</p> <p>AP2-005-010</p> <p>Map CT-06-237-L1, G1 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>An accommodation access track, along which the Blakenhall Bridleway 12 would be diverted, would be provided to join Wrinehill Road to the south of the Crewe south cutting, west of Gonsley Green Farm.</p>	<p>Additional land will be required for the permanent relocation of hedgerow habitat creation, included in the original scheme, to improve visibility for traffic using the junction of Wrinehill Road and the accommodation track.</p>
<p>Additional land for two utility compounds at Newcastle Road and Chorlton Lane</p> <p>AP2-005-011</p> <p>Map CT-05-238, E5 to A6 and CT-05-239, J6 to H6 in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>Permanent diversion of a National Grid 600mm diameter gas transmission pipeline by 425m, to pass under the HS2 route, 75m south of Jubilee Farm.</p>	<p>Additional land will be required for two temporary additional utility compounds to manage the diversion of the National Grid 600mm diameter gas transmission pipeline.</p>
<p>Additional land required for access to Heath Farm</p> <p>AP2-005-012</p> <p>Map CT-06-239, I6 to I7 in the SES2 and AP2 ES Volume 2, CA5 Map Book.</p>	<p>Access to Heath Farm would be via an existing track off the existing Newcastle Road.</p>	<p>Additional land will be required for the provision of a permanent access road to Heath Farm via the diverted Chorlton Lane.</p>
<p>Rail systems modifications and civil engineering works in and around Crewe Station; and removal of rail systems and civil engineering modifications to the Crewe to Cheadle Hulme Line</p> <p>AP2-005-013</p> <p>Map CT-06-241a, I9 to A1 in the SES2 and AP2 ES Volume 2, CA5 Map Book;</p>	<p>Modifications would be required to the existing conventional railway at Crewe Station to accommodate HS2 rail services, including reconfiguring the existing Cardiff to Manchester Piccadilly services, in order to release capacity within the station. A new island platform would be constructed at Crewe Station to accommodate the</p>	<p>The track configuration and associated railway systems to the west and north of the existing Crewe Station will be modified, and the island platform proposed in the original scheme will be replaced with a single-sided platform. Services on the Crewe to Manchester Piccadilly and Cardiff to Manchester routes will be diverted to the new platform, in order to release capacity within Crewe</p>

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Name of the AP2 amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant).	Description of the AP2 revised scheme
<p>and CT-05-242 to CT-05-245, in the SES2 and AP2 ES Volume 4: Off-route effects Map Book.</p>	<p>Cardiff to Manchester Piccadilly services.</p> <p>Further modifications would be required to the Crewe to Cheadle Hulme Line (part of the WCML) infrastructure at Maw Green and Sandbach including new track works and crossings, raising an existing footbridge close to Sandbach Station, and modifications to the existing rail systems including signalling and overhead line equipment.</p>	<p>Station to accommodate the HS2 services.</p> <p>As a result of the revised platform design to the west of Crewe Station and additional works proposed north of Crewe Station modifications to the Crewe Cheadle Hulme Line (part of the WCML) infrastructure at Maw Green and Sandbach will no longer be required.</p> <p>All construction activities associated with the infrastructure and railway system modifications, in and around Crewe Station, will be managed from the Motorail Terminal main compound.</p> <p>Three railway systems compounds, reported in the off-route effects in the main ES, Volume 4, will support the construction and installation of the railway systems infrastructure. These are: Tommy's Lane Road Rail Access Point, Crewe Retail Park and Rookery Bridge Road Rail Access Point.</p>

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Figure 5: Locations of AP2 engineering amendments in the South Cheshire area



4.2.2 Amendments in the South Cheshire area result in changes to waste arisings, which are reported in Volume 5: Appendix WM-001-000 of the SES2 and AP2 ES.

4.2.3 An assessment of the likely significant environmental effects associated with the disposal of construction, demolition, excavation and operational waste has been undertaken route-wide for the AP2 revised scheme. See Volume 3, Section 11 of the SES2 and AP2 ES for details of this assessment.

4.3 Minor utility amendments

4.3.1 Amendments to minor utilities will be required in the South Cheshire area to provide connections to construction compounds and to maintain continuity of supply in the area. This will result in changes to the land or Bill powers required for the SES2 scheme and separately the AP1 revised scheme where relevant. Typically, works associated with minor utility amendments will be small in scale and similar to the types of works undertaken routinely by utility providers in the normal course of their activities. The duration of minor utility works will generally be short term. Provision of access to adjacent properties will usually be maintained during the works with alternative access arrangements being made where necessary. Where relevant, the implementation of the works will be subject to appropriate traffic management measures to ensure that disruption to non-motorised users and vehicular traffic is reduced insofar as reasonably practicable.

4.3.2 Table 5 provides a summary of the minor utility amendments and the changes to land or Bill powers required. Consideration has been given to the potential for new or different likely significant cumulative effects of the minor utility amendments acting in combination with other SES2 changes and AP1 amendments and reported where relevant.

4.3.3 Figure 6 shows the general location of the minor utility amendments.

Table 5: Summary of AP2 minor utility amendments in the South Cheshire area

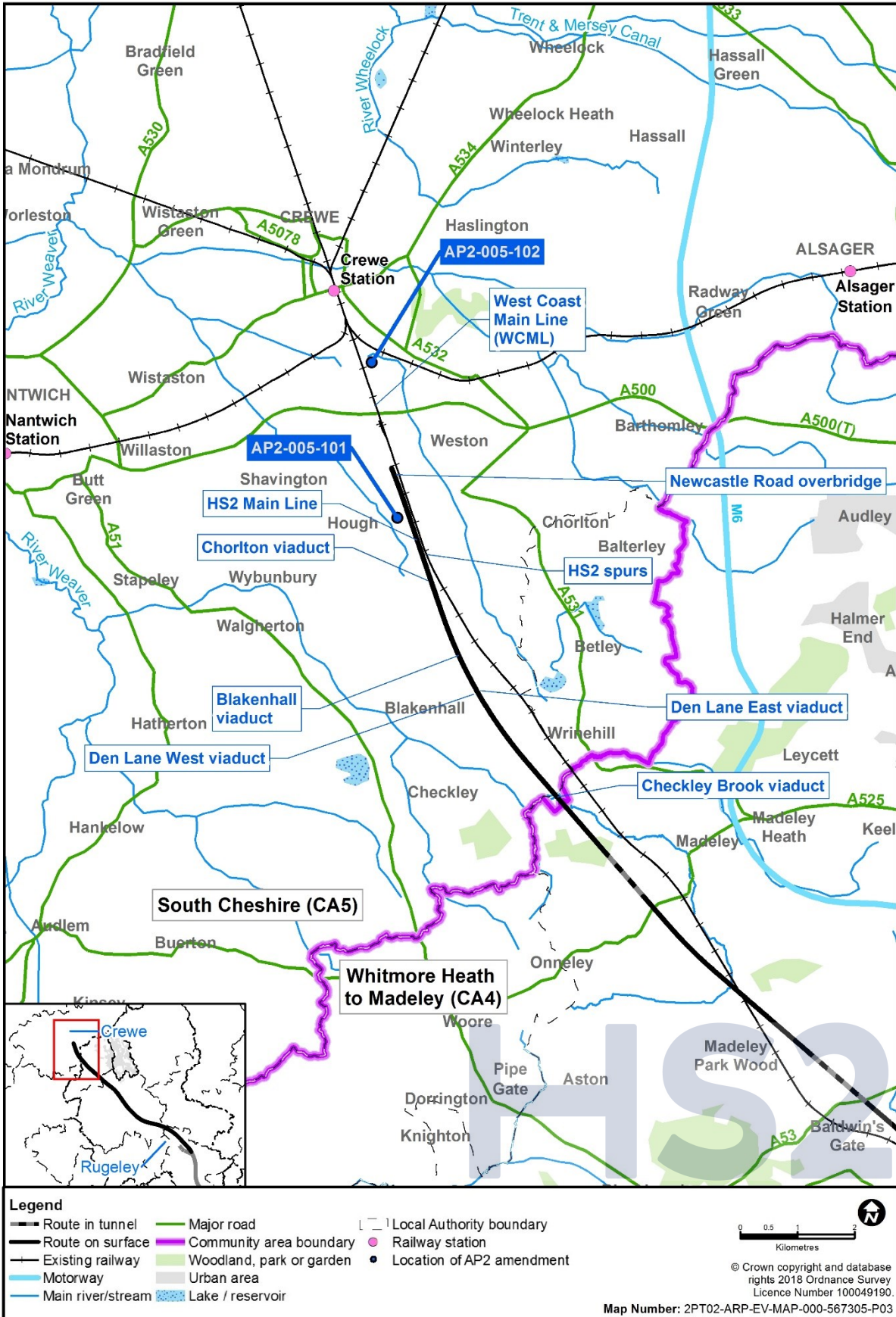
Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Additional land for a new diversion of a United Utilities water mains supply north of Heath Farm</p> <p>AP2-005-101</p> <p>Map CT-06-239, I5 to I4 and I7 to F10, and Map CT-06-239-L1, H1 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>No provision was made for the permanent diversion of a United Utilities water mains supply north of Heath Farm.</p> <p>The AP1 revised scheme (AP1-005-120: Additional land for new temporary Scottish Power 11kV power supply to Crewe South portal satellite compound and a new permanent Scottish Power 11kV power supply to balancing pond pump station), provides for additional land which overlaps with the land required for this amendment.</p>	<p>Additional land will be required for a new permanent diversion of a United Utilities water mains supply, 1.2km in length, running from a point 200m west of Chorlton Lane, crossing under the HS2 route and the WCML, 420m south of Newcastle Road overbridge, continuing west and north-west to the north of Heath Farm, Newcastle Road and Casey Lane, and re-connecting to the existing utility 20m east of Back Lane.</p> <p>This amendment is dependent on the AP1-005-120 (Additional land for new temporary Scottish Power 11kV power supply to Crewe South portal satellite compound and a new permanent Scottish Power 11kV power supply to balancing pond pump station) being enacted, as part of the additional land included within the AP1 revised scheme is also required for the utility works described in this amendment.</p>

SES2 and AP2 ES Volume 2 – Community area 5, South Cheshire

Name of the AP2 minor utility amendment	Description of the SES2 scheme (and AP1 revised scheme where relevant)	Description of the AP2 revised scheme
<p>Additional land for a new underground Openreach telecommunications cable to Crewe South Crossovers railway systems satellite compound</p> <p>AP2-005-102</p> <p>Map CT-05-240-R1, G4 to D3, in the SES2 and AP2 ES Volume 2, CA5 Map Book</p>	<p>No provision was made for a new temporary underground Openreach telecommunications cable to Crewe South Crossovers railway systems satellite compound.</p>	<p>Additional land will be required for a new temporary underground Openreach telecommunications cable, 1.1km in length, running from an existing telecommunications cable on Savoy Road, for 540m along David Whitby Way to an existing roundabout, and continuing west to the Crewe South Crossovers railway systems satellite compound.</p>

SES2 and AP2 ES Volume 2 – Community area 5, South Cheshire

Figure 6: Locations of AP2 minor utility amendments in the South Cheshire area



5 Assessment of engineering amendments in the South Cheshire area

5.1 Additional land required for a construction traffic route at the A500 Shavington Bypass (AP2-005-001)

- 5.1.1 The Bill provides for temporary construction traffic routes along the local roads of Den Lane, Wrinehill Road and Checkley Lane, passing through the village of Wybunbury, and near to sensitive locations including Wybunbury Delves Church of England primary school.
- 5.1.2 Site haul routes were identified in the original scheme, including a site haul route from the A500 Shavington Bypass to Basford cutting main compound, to reduce the impact on the local road network.
- 5.1.3 Since submission of the Bill, work has been undertaken to further reduce the use of minor local roads of Den Lane, Wrinehill Road and Checkley Lane by construction traffic. This will include provision of an enhanced site haul route access from the A500 Shavington Bypass.
- 5.1.4 The following junction works for construction traffic will be provided:
- a left filter lane from the A500 Shavington Bypass (westbound) into the Basford cutting main compound. See Map CT-05-240-L1, H2 to G4, in the SES2 and AP2 ES Volume 2, CA5 Map Book; and
 - additional land for a signalised priority junction with associated link road onto the B5071 Crewe Road. See Map CT-05-240-L1, G4 to G6, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.1.5 A maintenance access road from the A500 Shavington Bypass roundabout to the Basford cutting main compound proposed in the original scheme will no longer be required.
- 5.1.6 Additional land will also be required to improve temporary site haul routes. These improvements will provide greater separation between road going construction traffic such as heavy goods vehicles (HGVs) and light goods vehicles (LGVs) and large earth moving equipment. This additional land will be required at the following locations:
- adjacent to the River Lea and Checkley Brook, south of Checkley North embankment, from Wrinehill Hall Farm (CA4/20) in the Whitmore Heath to Madeley area (CA4). See Map CT-05-235, I6 to H7, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
 - north of Checkley Lane, west of Checkley Lane overbridge, from Lower Den Farm (CA5/2). See Map CT-05-235, E7, in the SES2 and AP2 ES Volume 2, CA5 Map Book;
 - south of Den Lane, west of the Blakenhall Northbound Spur cutting, from Grange Farm (CA5/1) See Map CT-05-236, H6, in the SES2 and AP2 ES Volume 2, CA5 Map Book;

- north of the Newcastle Road/Chorlton Lane diversion junction, from the Moss (CA5/16) and Rope Green Farm (CA5/17). See Map CT-05-239, H6 to G6, in the SES2 and AP2 ES Volume 2, CA5 Map Book; and
- north of Basford Hall, north of Weston Lane, from Basford Hall (CA5/21) and Lurch Farm (CA5/22). See Map CT-05-239, C6 to B7, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.1.7 Construction associated with this amendment will be managed from Basford cutting main compound.
- 5.1.8 The temporary construction traffic route and site haul routes will be in use for the duration of the construction period, as set out in the main ES.
- 5.1.9 The land required for the temporary construction traffic route, site haul routes and traffic separation is outside the limits of the Bill and will result in a requirement for an additional 3.1ha land some of which will be from the following agricultural holdings: Wrinehill Hall Farm (CA4/20) (in the Whitmore Heath to Madeley area), Grange Farm (CA5/1), Lower Den Farm (CA5/2), the Moss (CA5/16), Rope Green Farm (CA5/17), Basford Hall (CA5/21), Lurch Farm (CA5/22) and Land South of A500 Shavington Bypass (CA5/24). CT-05-235, I7 to H7 and E8 to E7, Map CT-05-236, H6, Map CT-05-239 H6 to G6, and C6 to B8, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.1.10 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: cultural heritage; ecology and biodiversity; and traffic and transport. This is reported within this section.
- 5.1.11 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Cultural heritage

Scope, assumptions and limitations

- 5.1.12 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1 of the Scope and Methodology Report (SMR)²¹ and SMR Addendum of the main ES²² and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.1.13 As the cultural heritage impacts of the amendment are not reversible, they therefore have the potential to result in new or different significant permanent construction

²¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

²² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

effects only. Therefore, there is no temporary construction or operational assessment for cultural heritage.

Existing environmental baseline

- 5.1.14 The baseline cultural heritage information for the South Cheshire area is as described in Volume 2, CA5, Section 7 of the main ES.
- 5.1.15 The site of Basford Hall including a possible moat and historic farm buildings, north of Weston Lane (SCHo45), a non-designated asset of moderate value, is located partially within the land required for the amendment.
- 5.1.16 Further information about this asset is provided in the main ES Volume 5: Appendix CH-002-005 and Map Series CH-01 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.1.17 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.18 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)²³ are identified.

Assessment of impacts and effects

- 5.1.19 The main ES reported there would be a permanent major adverse significant effect on the surviving earthworks, historic buildings and buried archaeological features in the area of Basford Hall (SCHo45), a non-designated asset of moderate value. This amendment will increase the extent of the asset to be removed during construction, including the removal of the last upstanding building associated with Basford Hall. This will give rise to a different significant effect; however, this will not change the level of significance of the effect reported in the main ES.
- 5.1.20 For further information see Map Series CH-01 in the SES2 and AP2 ES Volume 5: Cultural heritage Map Book, and the SES2 and AP2 ES Volume 5: Appendix CH-003-000.

Mitigation and residual effects

Other mitigation measures

- 5.1.21 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

²³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Summary of likely residual significant effects

- 5.1.22 The amendment will give rise to a different likely residual permanent major adverse significant effect on the site of Basford Hall (SCH045) by increasing the extent of the asset to be removed during construction, including the last upstanding building associated with Basford Hall. However, this will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.1.23 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.1.24 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.1.25 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.1.26 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.1.27 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.1.28 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat survey.
- 5.1.29 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document BID-EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.1.30 For those receptors described in the main ES, further details are provided in Volume 2, CA5, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12²⁴.

²⁴ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

- 5.1.31 For those receptors described in SES₁, further details are provided in Volume 2, CA5, Section 3. The baseline ecology report that accompanied SES₁ and AP₁ ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12²⁵.

Designated sites

- 5.1.32 There are no designated sites of relevance to the assessment of the amendment.

Habitats

- 5.1.33 Habitats within the area subject to the amendment include broadleaved semi-natural woodland, broadleaved plantation woodland, semi-improved neutral grassland, semi-improved grassland, improved grassland, arable, and waterbodies. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.1.34 Broadleaved semi-natural woodland and broadleaved plantation woodland is present adjacent to the A500 Shavington Bypass. The semi-natural areas are likely to qualify as lowland mixed deciduous woodland, a habitat of principal importance as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)²⁶ and a conservation priority of the Cheshire Biodiversity Action Plan²⁷ (BAP). The woodland is located partially within the area subject to the amendment. The woodland is of up to district/borough value.
- 5.1.35 Semi-improved neutral grassland is present adjacent to the A500 Shavington Bypass. This grassland is likely to qualify as lowland meadow, a habitat of principal importance, and a conservation priority of the Cheshire BAP. The grassland is located partially within the area subject to the amendment. The grassland is of district/borough value.
- 5.1.36 Seven ponds occur within the area subject to the amendment. On a precautionary basis it is assumed that these qualify as habitats of principal importance and a conservation priority of the Cheshire BAP. Each of these ponds is of up to district/borough value.

Species

- 5.1.37 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include great crested newt, common amphibians, bats, common reptile species, badger, polecat, harvest mouse, European hedgehog and brown hare.

²⁵ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

²⁶ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

²⁷ Cheshire Wildlife Trust, (2007), *Biodiversity Action Plans for Priority Species and Habitats in Cheshire*. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/BAP%2olist%20-%20updated%20April%202011.pdf>

- 5.1.38 The main ES, as amended by SES₁, reported a great crested newt metapopulation²⁸ situated south of Crewe (AMP²⁹5.4). Field surveys determined the presence of great crested newt in 27 ponds of 40 surveyed, within a network of 55 ponds assumed to be used by this metapopulation. Seven ponds within the metapopulation are within the area subject to the amendment. Terrestrial habitats likely to be used by this metapopulation occur within the area subject to the amendment, in the form of grassland and broadleaved woodland. Great crested newt is an Annex 2 species³⁰, a species of principal importance, and a conservation priority of the Cheshire BAP. The great crested newt population associated with habitats south of Crewe is of county value.
- 5.1.39 The main ES reported a bat assemblage associated with habitats around Basford/Weston Lane. Field surveys in this area recorded non-breeding roosts of rarer species, including noctule, within habitat and features present within the area. Three day/summer roosts supporting noctule, common and soprano pipistrelle bats were recorded within the land required for the original scheme. A number of other trees and buildings were recorded adjacent to the land required for the original scheme as supporting four species of bats comprising Natterer’s bat, brown long-eared, common and soprano pipistrelle. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage potentially includes species of principal importance and species that are conservation priorities of the Cheshire BAP. The bat assemblage associated with habitats around Basford/Weston Lane is of up to county value.
- 5.1.40 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the South Cheshire area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout the South Cheshire area are of local/parish value.
- 5.1.41 The main ES reported populations of common reptile species such as grass snake and slow-worm, identified through desk study records, as being potentially present at low numbers throughout the South Cheshire area. Grass snake and slow-worm are both species of principal importance. Grass snake is also a conservation priority of the Cheshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.1.42 The main ES, as amended by SES₁, reported at least five social groups of badger throughout the South Cheshire area, identified through field surveys. The area subject

²⁸ A metapopulation is a group of spatially separated populations which interact. Metapopulations are described in BID-EC-007-000, Ecological baseline data - amphibian and pond surveys.

²⁹ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered when following the route from London.

³⁰ Annex 2 of the EU’s Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation (SAC).

to the amendment includes suitable sett building and foraging habitats for badger. The badger populations throughout the South Cheshire area are of local/parish value.

- 5.1.43 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog, and brown hare, identified through desk study records, as being potentially present throughout the South Cheshire area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.1.44 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.45 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.1.46 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.1.47 All of the effects within this section are reported in the absence of other mitigation.

Habitats

- 5.1.48 It is not likely that any effects on habitats of relevance will occur at more than the local/parish level as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.1.49 The main ES reported a direct loss of bat roosts and loss and fragmentation of foraging and commuting habitat used by the assemblage of bats associated with habitats around Basford/Weston Lane, which would result in a permanent adverse effect that is significant at county level. The amendment will result in the loss of additional areas of grassland and woodland assumed to support bat roosts and provide foraging and commuting habitat for the bat assemblage. This will result in a different significant effect on the bat assemblage associated with habitats around Basford/Weston Lane. However, the amendment will not change the level of significance of the effect as reported in the main ES.
- 5.1.50 The main ES, as amended by SES1, reported the loss of three ponds and associated terrestrial habitats that are known or assumed to be used by the great crested newt metapopulation situated south of Crewe (AMP 5.4), which would result in a permanent adverse effect that is significant at county level. The amendment will result in the loss of additional areas of terrestrial habitat within 50m of seven ponds, and the fragmentation of four ponds assumed to be used by this metapopulation.

This will give rise to a different significant effect on the great crested newt metapopulation situated south of Crewe. However, the amendment will not change the level of significance of the effect as reported in the main ES, as amended by SES1.

- 5.1.51 It is not likely that any other effects on species of relevance will occur at more than the local/parish level as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.1.52 The main ES reported habitat creation measures in areas to the north of, and parallel to Weston Lane and south-east of Basford to compensate for the loss of foraging, commuting and roosting habitats for bats, including the creation of woodland habitat. Once established these habitat creation measures will provide suitable bat foraging and commuting habitat. Artificial roosting features will be provided across these habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated with habitats around Basford/Weston Lane to a level that is not significant.
- 5.1.53 The main ES reported provision of ponds, species-rich neutral grassland and broadleaved woodland in areas to the south of the A500 Shavington Bypass and to the south of Casey Lane to compensate for the loss of breeding sites, foraging habitat and places of shelter for great crested newt. Once established these habitats will provide suitable terrestrial and aquatic habitat for great crested newt. These measures will reduce the different adverse effect resulting from this amendment on the great crested newt metapopulation situated south of Crewe (AMP 5.4) to a level that is not significant.

Summary of likely residual significant effects

- 5.1.54 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not considered to be significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES and SES1.

Cumulative effects

- 5.1.55 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the AP2 amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.1.56 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

- 5.1.57 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.1.58 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.1.59 The baseline traffic and transport information for the South Cheshire area is as described in Volume 2 CA5, Section 14 of the main ES.
- 5.1.60 Weston Lane is a local road in the South Cheshire area. There are a number of PRoW which cross the area, including Basford Footpath 11 which joins Weston Lane to the A500 Shavington Bypass.

Future environmental baseline

Construction (2023)

- 5.1.61 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.1.62 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.1.63 The main ES reported the temporary stopping up of part of Basford Footpath 11 to facilitate site haul routes to enable construction of the HS2 route. However, as only a short section of Basford Footpath 11 would be affected, the effect on non-motorised users would not be significant.
- 5.1.64 This amendment modifies the internal site haul routes but does not change the impact on Basford Footpath 11.
- 5.1.65 This amendment will therefore not give rise to any new or different likely residual significant effects on the users of Basford Footpath 11 and will not change the level of significance of the effects reported in the main ES.
- 5.1.66 For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID-TR-001-000 SES2 AP2 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.1.67 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.1.68 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.1.69 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.1.70 The baseline water resources information for the South Cheshire area is as described in Volume 2, CA5, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-005, Appendix WR-003-005 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.1.71 This amendment is located in the catchment of Wistaston Brook which is a high value receptor. The amendment will involve construction activities of a nature and scale that have potential implications for water resources and flood risk.

Future environmental baseline

Construction (2020)

- 5.1.72 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.1.73 The main ES reported no significant effects on surface water or groundwater quality due to site runoff and increased pollution risk in the vicinity of this amendment. The amendment has the potential to give rise to temporary adverse impacts on surface water quality in Wistaston Brook which could affect the water environment. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.1.74 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.1.75 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP1 amendments or AP2 amendments.

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

- 5.1.76 The amendment will give rise to a different likely residual permanent adverse significant effect on the site of Basford Hall (SCHO45), by increasing the extent of the

asset to be removed during construction. However, this will not change the level of significance of the effect reported in the main ES.

5.2 Additional land and a change to Bill powers for a fuel pipeline diversion and new utility compound at Checkley Lane (AP2-005-002)

- 5.2.1 Since submission of the Bill, further engagement with utility providers has identified a requirement to divert a 2.3km section of an existing Mainline Pipelines Ltd 12-inch diameter fuel pipeline, and provide a new utility compound for the management of the diversion works.
- 5.2.2 The existing fuel pipeline runs under the land required for construction and operation of the scheme, crossing under the HS2 northbound and southbound spurs, Den Lane and Blakenhall Bridleway 8 to the west of the West Coast Main Line (WCML), and passing under an area identified as the location for a borrow pit north of Checkley Lane in the original scheme.
- 5.2.3 The 2.3km section of pipeline will be permanently diverted from a point 100m south of Checkley Lane and continue north, across the location of the borrow pit north of Checkley Lane, diverting around proposed balancing ponds, and 100m east of Blakenhall drop inlet culvert. The pipeline diversion will cross under Den Lane before connecting back into the existing fuel pipeline alignment to the south of the Blakenhall Bridleway 8 accommodation overbridge. See Map CT-06-235, E8 to A5, and Map CT-06-236, J4 to D2, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.2.4 To accommodate the diversion of the fuel pipeline, Blakenhall Bridleway 8 will be realigned. In addition, the excavation footprint of the borrow pit north of Checkley Lane included in the original scheme will be reduced by 0.2ha.
- 5.2.5 A new utility compound will be provided for the management of the fuel pipeline diversion works. Checkley Lane utility compound will be located between Grange farm and the HS2 route. See Map CT-05-235, E7 to D8 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.2.6 Checkley Lane utility compound will be operational for one year and three months from 2021 and will support an average of 15 workers per day (20 workers at peak times).
- 5.2.7 Access to the compound will initially, during site set up, be from Checkley Lane. See Map CT-05-235, E7 to D8, in the SES2 and AP2 ES, Volume 2, CA5 Map Book. Thereafter, access will be along site haul routes. A pipe laydown area will be provided during construction to the east of the HS2 route at Blakenhall Footpath 17.
- 5.2.8 The diversion of the fuel pipeline is outside the limits of the Bill and will result in the requirement for an additional 4.9ha of land, some of which will be from the following agricultural land holdings: Grange Farm (CA5/1) and Lower Den Farm (CA5/2); and a change in Bill powers for maintenance access. See Map CT-05-235, F8 to A5, Map CT-05-236, J5 to B1, and Map CT-05-236-R1, C10 to B9, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.2.9 The land required for the Checkley Lane utility compound is outside the limits of the Bill and will result in a requirement for an additional 2.9ha of land from Lower Den

Farm (CA5/2). It is assumed that this additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.2.10 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: agriculture, forestry and soils; community; ecology and biodiversity; traffic and transport; and water resources and flood risk. This is reported within this section.
- 5.2.11 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Agriculture, forestry and soils

Scope, assumptions and limitations

- 5.2.12 The assessment scope, key assumptions and limitations for agriculture, forestry and soils are as set out in Volume 1, the Scope and Methodology Report³¹ (SMR) and SMR Addendum³² of the main ES.
- 5.2.13 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for agriculture, forestry and soils.

Existing environmental baseline

- 5.2.14 The baseline agriculture, forestry and soils information for the South Cheshire area is as described in Volume 2, CA5 Section 4 of the main ES.
- 5.2.15 The area of land required for this amendment has soil in the Wick 1 association, as described in Volume 2, CA5, Section 4 of the main ES. Wick 1 association comprises of deep, well drained, coarse loamy and sandy soils. The land is classified as very good quality land in Grade 2³³.
- 5.2.16 One farm holding, already affected by the original scheme, will be further affected by this amendment. Grange Farm (CA5/1) is a 372ha arable and poultry farm of high sensitivity to change.

³¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

³² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

³³ The quality of agricultural land in England and Wales is assessed according to the Agricultural Land Classification (ALC) system, which classifies agricultural land into five grades from excellent quality Grade 1 land to very poor quality Grade 5 land. Grade 3 is subdivided into Subgrades 3a and 3b. Grades 1, 2 and 3a are defined as the best and most versatile (BMV) land. The ALC methodology is contained in: Ministry of Agriculture, Fisheries and Food (1988), *Agricultural Land Classification of England and Wales – Revised guidelines and criteria for grading the quality of agricultural land*.

Future environmental baseline

Construction (2020)

- 5.2.17 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.18 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)³⁴ are required.

Assessment of impacts and effects

- 5.2.19 This amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES on best and most versatile (BMV) agricultural land or forestry land within the South Cheshire area as it is not of a scale to change the magnitude of impact. The route-wide effects on BMV land and forestry land are reported in Volume 3 of the SES2 and AP2 ES.
- 5.2.20 The main ES reported a temporary major adverse significant effect on Grange Farm (CA5/1). Approximately 46.8ha (13% of the total area of the land holding) would be required temporarily, resulting in a medium impact. Severance during construction is assessed as a high impact, and the disruption from noise and dust on the poultry enterprise during construction is assessed as a low impact.
- 5.2.21 The amendment will require an additional 2.9ha of land temporarily from the land holding, resulting in a total area required temporarily of 49.7ha (13% of the total area of the land holding), which is a medium impact. Seven buildings that house approximately 620,000 laying hens are located immediately to the west of Checkley Lane utility compound. The intake for the high-velocity fans that ventilate these buildings is on the east side, facing the utility construction compound, and there is the potential for dust emissions to enter the buildings. The amendment will give rise to a different significant effect to that reported in the main ES as the location and proximity of the utility compound to the poultry buildings is likely to increase the disruptive impact during construction on Grange Farm from low to medium. However, this will not change the level of significance of the temporary effects reported in the main ES. There is no change to the permanent land required from this land holding.
- 5.2.22 For further information see SES2 and AP2 ES Volume 5: Appendix AG-001-000 and the main ES Volume 5: Agriculture, forestry and soils Map Book.

³⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Mitigation and residual effects

Other mitigation measures

- 5.2.23 Detailed design of Checkley Lane utility compound will seek to reduce the area to be used for construction activities, including the volume of topsoil to be stripped and stored within the compound. Where reasonably practicable, dust-emitting activities will be located as far from the high-velocity fans as possible within the overall compound area. In addition, consideration will be given to the surfacing material to be used within the compound in order to minimise dust emissions.

Summary of likely residual significant effects

- 5.2.24 The amendment will give rise to a different likely residual significant effect at Grange Farm (CA5/1), due to the potential increase in disruption on the farm buildings. However, this will not change the level of the significance of the effects reported in the main ES.

Cumulative effects

- 5.2.25 There are no new or different likely significant cumulative effects for agriculture, forestry and soils as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Community

Scope, assumptions and limitations

- 5.2.26 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.2.27 This amendment has the potential to result in new or different significant temporary construction effects only. Therefore, there are no permanent construction or operational assessments for community.

Existing environmental baseline

- 5.2.28 The baseline community information for the South Cheshire area is as described in Volume 2, CA5, Section 6 of the main ES.
- 5.2.29 Between the settlements of Wrinehill and Blakenhall are a number of sparsely located, detached rural farm properties along Den Lane and Checkley Lane.

Future environmental baseline

Construction (2020)

- 5.2.30 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.31 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.2.32 The additional land for a permanent fuel pipeline diversion and new utility compound at Checkley Lane was not included in the original scheme and therefore the main ES did not report any significant in-combination effects associated with it. This amendment has been assessed for potential heavy goods vehicle (HGV) traffic effects to determine if these give rise to a new significant in-combination effect on community resources in this area. The assessment has concluded that this amendment will not give rise to any new likely residual significant effects. The amendment will therefore not give rise to any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.2.33 There are no new or different likely significant cumulative effects for community receptors as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.2.34 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.2.35 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.2.36 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.2.37 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.2.38 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.2.39 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document BID-EC-019-000, including Map Series EC-02, which accompanies the SES2 and AP2 ES.
- 5.2.40 For those receptors described in the main ES, further details are provided in Volume 2, CA5, Section 8, and Volume 5 (Appendix EC-001-000), including Map Series EC-01.

Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12³⁵.

- 5.2.41 For those receptors described in SES₁, further details are provided in Volume 2, CA5, Section 3. The baseline ecology report that accompanied SES₁ and AP₁ ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12³⁶.

Designated sites

- 5.2.42 There is one Ramsar Site of relevance to the assessment of the amendment, which is of international value. Midland Meres and Mosses Phase 1 Ramsar Site, covering an area of approximately 510.9ha, is designated for its nutrient-rich water bodies (meres), and associated fringe habitats of reed swamp, fen carr, and damp pasture and quaking peat bog. The closest component unit of the Ramsar Site to the area subject to the amendment is Betley Mere Site of Special Scientific Interest (SSSI), approximately 288m to the south of the area subject to the amendment.
- 5.2.43 The land subject to the amendment is located within a Natural England Impact Risk Zone³⁷ for Betley Mere SSSI, which is of national value. Betley Mere SSSI, covering an area of approximately 29.4ha, is designated as one of the few natural standing waters in Staffordshire and occupies a shallow valley in glacial deposits, bound on three sides by extensive peat deposits on which a wide range of vegetation types have developed. The zonation from open water with floating-leaved aquatic plants through emergent reed swamp, fen and carr to mature fen woodland, is considered to be as complete an example of a wetland hydrosere³⁸ as occurs in the county.
- 5.2.44 There is one Local Wildlife Site (LWS) of relevance to the assessment of the amendment, which is of county value. Randilow and Bunker Hill LWS covers an area of approximately 105.2ha, comprises a number of arable fields, 15 water bodies, semi-natural neutral and marshy grassland, hedgerows and an area of lowland deciduous woodland and wet woodland. The site is considered to support an important breeding farmland bird assemblage, seven species of bat and great crested newt. The site is designated as an LWS for its bird and bat assemblages and for the areas of woodland present, including notable ground flora species. Randilow and Bunker Hill LWS is located partially within the area subject to the amendment.

Habitats

- 5.2.45 Habitats within the area subject to the amendment include broadleaved woodland, semi-improved grassland, improved grassland, arable, species-poor and species-rich

³⁵ HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

³⁶ HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

³⁷The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

³⁸A hydrosere is a plant succession occurring in areas of freshwater that will over time, ultimately become woodland.

hedgerows, trees, watercourses and ponds. The habitats of relevance to the assessment of the amendment are described in further detail below.

- 5.2.46 Broadleaved semi-natural woodland is present to the north of Checkley Lane and west of Randilow Farm. This qualifies as mixed broadleaved woodland, a habitat of principal importance as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)³⁹ and a conservation priority of the Cheshire Biodiversity Action Plan⁴⁰ (BAP). This woodland is located within the area subject to the amendment. The woodland is of district/borough value.
- 5.2.47 Other small areas of semi-natural woodland are present within the area subject to the amendment. These are of up to local/parish value.
- 5.2.48 Areas of species-poor semi-improved grassland and neutral semi-improved grassland are present within the area subject to the amendment to the west and south-west of Higher Den House. These grasslands are of up to local/parish value.
- 5.2.49 The majority of the area subject to the amendment is arable land. Areas of arable land within Randilow and Bunker Hill LWS support notable fauna, as described below. However, the arable land itself is not considered to be a habitat of ecological value.
- 5.2.50 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerows with at least 80% cover of native woody species is a habitat of principal importance and a conservation priority of the Cheshire BAP. These contribute towards a wider hedgerow network within the South Cheshire area that is of district/borough value.
- 5.2.51 A minor watercourse, a tributary of Mere Gutter, is crossed by the WCML to the north-west of Lower Den Farm within the area subject to the amendment. The watercourse and associated habitats are likely to provide corridors for wildlife dispersal. The watercourse is of up to local/parish value.
- 5.2.52 Three ponds occur within the area subject to the amendment. On a precautionary basis it is assumed that these qualify as habitats of principal importance and a conservation priority of the Cheshire BAP. Each of these ponds is of up to district/borough value.

Species

- 5.2.53 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, great crested newt, common amphibians, breeding birds, polecat, harvest mouse, European hedgehog, brown hare and common reptile species.
- 5.2.54 The main ES, as amended by SES1, reported a bat assemblage associated with habitats around Checkley Brook and Checkley Lane. Field surveys in this area recorded low to moderate levels of activity for a diverse assemblage of rarer bat species around Checkley Brook and Checkley Lane including *Myotis* species, noctule, *Nathusius' pipistrelle*, Leisler's bat and serotine. A summer noctule roost was recorded

³⁹ Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁴⁰ Cheshire Wildlife Trust, (2007), *Biodiversity Action Plans for Priority Species and Habitats in Cheshire*. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/BAP%20list%20-%20updated%20April%202011.pdf>

along Checkley Brook and a further unidentified roost was also recorded from within the vicinity of Checkley Brook. One roost for an unknown species was recorded from the area and although no evidence of a maternity roost was recorded, the potential presence of a rarer bat species, given foraging records in the area, cannot be discounted. Additionally, one common pipistrelle roost was identified in buildings on Checkley Lane. The area subject to the amendment contains a number of mature trees (including within hedgerows) with high potential to support roosting bats as well as potential foraging and commuting habitat. The bat assemblage includes several species of principal importance and species that are conservation priorities of the Cheshire BAP. The bat assemblage associated with habitats around Checkley Brook and Checkley Lane is of county value.

- 5.2.55 The main ES, as amended by SES1, reported a great crested newt metapopulation⁴¹ situated south-west of Checkley (AMP⁴²5.1). Field surveys determined the presence of great crested newt in eight ponds of 12 surveyed, within a network of 27 ponds assumed to be used by this metapopulation. Two ponds within the metapopulation are within the area subject to the amendment. Terrestrial habitats likely to be used by this metapopulation occur within the area subject to the amendment, in the form of hedgerows, grassland and woodland. Great crested newt is an Annex 2⁴³ species, a species of principal importance, and a conservation priority of the Cheshire BAP. The great crested newt population situated south-west of Checkley is of county value.
- 5.2.56 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the South Cheshire area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout South Cheshire are of local/parish value.
- 5.2.57 The main ES reported that the area within and surrounding the area subject to the amendment supported a total of 41 bird species that included six Red List species⁴⁴. The species recorded are typical of farmland habitats and were present in low numbers. The recorded breeding bird assemblage included 10 species that are listed on the Cheshire Wildlife Trust LWS selection criteria⁴⁵ and are of principal importance. Farmland birds, as a group, are a conservation priority of the Cheshire BAP. The wider area also supports two breeding pairs of yellow wagtail. There are records of three additional notable species provided by Cheshire Wildlife Trust in the Randilow and Bunker Hill LWS citation, comprising tree sparrow, grey partridge and corn bunting. The breeding bird assemblage is of county value.

⁴¹ A metapopulation is a group of spatially separated populations which interact. Metapopulations are described in BID-EC-007-000, Ecological baseline data - amphibian and pond surveys.

⁴² The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered on the Phase 2a scheme when following the route from the London end.

⁴³ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation (SAC).

⁴⁴ International Union for Conservation of Nature and Natural Resources Red List of Threatened Species. Available at: <http://www.iucnredlist.org/>

⁴⁵ Cheshire Wildlife Trust, (2012), Local Wildlife Site Selection Criteria for the Cheshire region. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/Cheshire%20LWS%20selection%20criteria.pdf>

- 5.2.58 The main ES reported populations of common reptile species such as grass snake and slow-worm, identified through desk study records, as being potentially present at low numbers throughout the South Cheshire area. Grass snake and slow-worm are both species of principal importance. Grass snake is also a conservation priority of the Cheshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.2.59 The main ES, as amended by SES1, reported at least five social groups of badger throughout the South Cheshire area, identified through field surveys. The area subject to the amendment includes suitable sett building and foraging habitats for badger. The badger populations throughout the South Cheshire area are of local/parish value.
- 5.2.60 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog, and brown hare, identified through desk study records, as being potentially present throughout the South Cheshire area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.2.61 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.62 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.2.63 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.2.64 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.2.65 No effects on Midland Meres and Mosses Ramsar Site and a component unit, Betley Mere SSSI, were reported within the main ES. The Ramsar Site and SSSI will not be directly affected by the amendment. The closest point of construction of the amendment will be related to the diversion of the pipeline to the east of Lower Den Farm, approximately 288m to the west of the SSSI. The Ramsar Site and SSSI are designated for their wetland habitats. The amendment will not give rise to new or different significant effects upon the designated features of the Ramsar Site or SSSI.
- 5.2.66 SES2 reported the loss of an area of approximately 58.3ha from Randilow and Bunker Hill LWS, comprising arable fields, water bodies, semi-natural neutral and marshy grassland, hedgerows, and lowland deciduous woodland and wet woodland, which would result in a permanent adverse effect that is significant at the county level. The amendment will result in an additional loss of approximately 0.4ha of arable land

and 20m of species-poor hedgerow from within the LWS. These habitats are not a reason for designation of the LWS and their loss will not significantly impact the notable fauna for which the LWS is designated. The amendment will not give rise to a new or different significant effect on Randilow and Bunker Hill LWS and will not change the level of significance of the effect, reported in SES2.

Habitats

- 5.2.67 The main ES reported the loss of 0.7ha of broadleaved semi-natural woodland to the north of Checkley Lane and west of Randilow Farm, now part of Randilow Farm and Bunker Hill LWS, which would result in permanent adverse effect that is significant at the district/borough level. The amendment will not alter the extent of broadleaved woodland loss to the north of Checkley Lane and west of Randilow Farm. The amendment will not give rise to any new or different significant effects on broadleaved woodland and will not change the level of significance of the effect reported in the main ES.
- 5.2.68 On a precautionary basis, the main ES as amended by SES1, reported a loss of 21.9km of hedgerow habitat within the land required for construction of the original scheme within the South Cheshire area, which would result in a permanent adverse effect that is significant at the district/borough level. The amendment will result in the loss of approximately an additional 20m of species-poor hedgerow and 130m of species-rich hedgerows. In the context of the hedgerow network within the South Cheshire area, this additional loss does not represent a new or different significant effect.
- 5.2.69 The main ES reported the loss of ponds within the land required for the original scheme. The loss was reported in the main ES as a permanent adverse effect on the conservation status of ponds that is significant, in each case, at up to district/borough level. The amendment will not result in the loss of additional ponds. The amendment will not result in a new or different significant effect on ponds and will not change the level of significance of the effect, reported in the main ES.
- 5.2.70 It is not likely that any other effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.2.71 The main ES reported the direct loss of bat roosts and a loss and fragmentation of foraging and commuting habitat used by the assemblage of bats associated with habitats around Checkley Brook and Checkley Lane, which would result in a permanent adverse effect that is significant at the county level. The amendment will result in the loss of three mature trees, one of which exhibits moderate potential to support bat roosts. This tree is assumed on a precautionary basis to support a bat roost. The assumed loss of an additional roost will give rise to a different significant effect on the bat assemblage associated with habitats around Checkley Brook and Checkley Lane. However, the amendment will not change the level of significance of the effect as reported in the main ES.
- 5.2.72 The main ES, as amended by SES1, reported the loss of eight ponds and associated terrestrial habitat that are known or assumed to be used by the great crested newt

metapopulation situated south-west of Checkley (AMP 5.1), which would result in a permanent adverse effect that is significant at up to county level. The amendment will not result in the additional loss of ponds or terrestrial habitat likely to be used by this metapopulation. The amendment will not give rise to a new or different significant effect on the great crested newt metapopulation situated south-west of Checkley and will not change the level of significance of the effects reported in the main ES.

- 5.2.73 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.2.74 The main ES reported habitat creation measures in areas to the north of Checkley Brook, north and south of Den Lane and west of Chorlton to compensate for the loss of foraging, commuting and roosting habitats for bats, including the creation of species-rich grassland, hedgerow, wetland and woodland habitat. Artificial roosting features will be provided across these habitat creation areas to replace bat roosts that will be lost to construction, in accordance with the Ecological Principles of Mitigation within the SMR Addendum. These measures will reduce the different adverse effect resulting from this amendment on the bat assemblage associated with habitats around Checkley Brook and Checkley Lane to a level that is not significant.

Summary of likely residual significant effects

- 5.2.75 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES, as amended by SES1.

Cumulative effects

- 5.2.76 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments. The combined effect on hedgerows as a result of the AP2 revised scheme is reported at a route-wide level in SES2 and AP2 ES, Volume 3, Route-wide effects.

Traffic and transport

Scope, assumptions and limitations

- 5.2.77 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.2.78 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.2.79 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows

as a result of this amendment in combination with all SES2 changes and AP amendments is reported in Section 7.

Existing environmental baseline

- 5.2.80 The baseline traffic and transport information for the South Cheshire area is as described in Volume 2, CA5, Section 14 of the main ES.
- 5.2.81 Den Lane and Checkley Lane are local roads in the South Cheshire area. Den Lane connects Wybunbury with Wrinehill across the WCML. Checkley Lane connects Checkley with the A51 London Road to the west and the A531 Main Road to the east.
- 5.2.82 There are a number of PRow which cross the area including Checkley-cum-Wrinehill Footpath 15, which connects Checkley-cum-Wrinehill Footpath 9 to Blakenhall Footpath 17; and Blakenhall Footpath 17 which connects Checkley-cum-Wrinehill Footpath 15 to Blakenhall Footpath 4. The surveys undertaken to inform the assessment showed that there were fewer than 10 people a day recorded on any of these PRow.

Future environmental baseline

Construction (2023)

- 5.2.83 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.2.84 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.2.85 No diversion for the utility was identified in the main ES.
- 5.2.86 The utility works would cross Checkley Lane, Blakenhall Footpath 17 and Checkley-cum-Wrinehill Footpath 15. The works would be undertaken under local traffic management and would result in disruption to the users. However, any disruption would be of short duration and be limited to where the utility crosses Checkley Lane, Blakenhall Footpath 17 and Checkley-cum-Wrinehill Footpath 15.
- 5.2.87 The amendment will therefore not give rise to any new or different likely residual significant effects on the users of Checkley Lane, Blakenhall Footpath 17 and Checkley-cum-Wrinehill Footpath 15 and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID-TR-001-000 SES2 AP2 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.2.88 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

Water resources and flood risk

Scope, assumptions and limitations

- 5.2.89 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the SMR and SMR Addendum of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.2.90 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.2.91 The baseline water resources information for the South Cheshire area is as described in Volume 2, CA5, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-005, Appendix WR-003-005 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.2.92 This amendment is located in the vicinity of Betley Mere Site of Special Scientific Interest (SSSI), a very high value receptor which forms part of the Midland Meres and Mosses Phase 1 Ramsar Site. The SSSI is approximately 300m to the east of the land subject to the amendment. The amendment will involve construction activities of a nature and scale that have potential implications for water resources and flood risk.

Future environmental baseline

Construction (2020)

- 5.2.93 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.2.94 The compound and pipe lay-down areas proposed under this AP2 amendment are remote from surface watercourses. There is consequently no direct surface water pathway from these areas to the Betley Mere SSSI. The compound and pipe lay-down areas are underlain by a Glaciofluvial Deposits Secondary A aquifer, which is a moderate value receptor.
- 5.2.95 The AP2 amendment involves excavation of a narrow trench in which to place the diverted fuel pipeline. This passes over a minor ditch to the south of Lower Den Farm. This ditch is not located within the surface water catchment of Betley Mere lake water body. However, it is within the catchment of a surface watercourse (an unnamed tributary of Mere Gutter) that passes along the western perimeter of the Betley Mere SSSI before entering its north-west corner. A 220-metre long reach of this watercourse is therefore within the SSSI and a pathway exists from the area required to construct the amendment into the north-west corner of the SSSI which is downstream of the open water areas of the Mere.
- 5.2.96 The risk of the Betley Mere SSSI being adversely affected by this AP2 amendment is negligible on the basis that:

- the activities required to install the 300mm diameter pipe will be temporary and of short duration;
- the areas required to construct the amendment are relatively small, with well-drained soils underlain by sand and gravel, so there will be limited runoff generated; and
- any contaminants within runoff from the construction area are likely to be filtered out by vegetation in the ditch, or to settle out, before they reach the SSSI.

5.2.97 In addition, the measures within the draft CoCP require the Contractor to take appropriate precautions when working adjacent to watercourses to manage the potential for deposition of silt or release of other forms of suspended material or pollution. These measures will be agreed with the Environment Agency and Natural England and will be in line with the requirements set out within the Environment Agency's pollution prevention guidance and CIRIA's C532: Control of water pollution from construction sites.

5.2.98 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

5.2.99 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

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

5.2.100 The amendment will result in a different likely residual significant effect on at Grange Farm (CA5/1), due to the potential increase in disruption on the farm buildings. However, this will not change the level of the significance of the effects reported in the main ES.

5.3 Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132kv overhead line at Checkley Lane and a utility compound (AP2-005-003)

5.3.1 The Bill provides for the permanent raising of an 860m section of a Scottish Power Energy Networks 132kV overhead line crossing over the HS2 route 1km north of Checkley Lane overbridge. See Map CT-06-235, A6 to E3, and Map CT-06-236, J2 to C10, in the main ES Volume 2, CA5 Map Book. To support these works three temporary material stockpiles would be provided on the south-west side of Blakenhall Northbound Spur cutting. See Map CT-05-235, D7 to A7, in the main ES Volume 2, CA5 Map Book. Raising the overhead line would take one year to complete, commencing in 2021, and would be managed from Blakenhall Northbound Spur embankment satellite compound.

- 5.3.2 Since submission of the Bill, further engagement with the utility provider has identified a requirement to amend the overhead line diversion proposed in the original scheme, replacing it with an underground diversion, and provide a new utility compound for the management of the diversion works. The overhead line will be diverted underground for a distance of 1.8km, crossing under the HS2 route to the north-west of the Checkley Lane overbridge and reconnecting to the existing overhead line on the west side of the HS2 route. Four existing pylons will be removed.
- 5.3.3 The southern end of the underground diversion will connect to the existing overhead line, approximately 350m north-east of Crewe South cutting, and run west before crossing under the HS2 route. On the south-west side of the HS2 route, the underground diversion will continue north-west alongside the Blakenhall Northbound Spur cutting. See Map CT-06-235, C4 to A7 and Map CT-06-236, J6 to G7 in the SES2 and AP2 ES Volume 2, CA5 Map Book. The underground diversion will continue west past the Blakenhall drop inlet culvert before reconnecting into the existing overhead line, to the south of Mill Lane and 300m south-west of the Den Lane West viaduct. See Map CT-06-236, G7 to E9, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.3.4 The diversion of the overhead line will require the relocation of two temporary material stockpiles, south-west of Blakenhall Northbound Spur cutting. These stockpiles will be combined to form one stockpile area, east of their location in the original scheme. See Map CT-05-236, I7 to G8 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.3.5 The original scheme assumed management of the utility diversion from the Blakenhall northbound spur embankment compound.
- 5.3.6 A new utility compound will be provided for the Scottish Power Energy Networks overhead line diversion works. Den Lane utility compound A will be located 250m south-east of Den Lane. Access to the compound will initially be from Den Lane at site set up. Thereafter, access would be from the A500 Shavington Bypass and along site haul routes. See Map CT-05-236, F6 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.3.7 Den Lane utility compound A will be operational for one year and three months commencing from 2021, and will support an average of 15 workers per day (20 workers at peak times).
- 5.3.8 The diversion works in this amendment will be undertaken over a period of six months, commencing in 2021.
- 5.3.9 The land required for the underground diversion of the Scottish Power Energy Networks 132kV overhead line is outside the limits of the Bill and will result in a change to Bill powers and a requirement for an additional 2.5ha of land some of which will be from the following land holdings: Grange Farm (CA5/1), Ash Tree Farm (CA5/3) and Lower Den Farm (CA5/2). See Map CT-05-235, E2 to A8 and Map CT-05-236, J2 to C10, in the SES2 and AP2 ES Volume 2, CA5 Map Book. There will also be a requirement for an additional 2.3ha of land, some of which will be from Grange Farm (CA5/1), for the relocation of the two material stockpile areas. See Maps CT-05-235, E2 and CT-05-236, C10, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.3.10 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES; as amended by SES1 and SES2; for ecology and biodiversity. This is reported in this section.
- 5.3.11 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.3.12 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report (SMR)⁴⁶ and SMR Addendum⁴⁷ of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.3.13 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.3.14 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.3.15 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.3.16 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources.
- 5.3.17 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document BID-EC-019-000, including Map Series EC-01, which accompanies the SES2 and AP2 ES.
- 5.3.18 For those receptors described in the main ES, further details are provided in Volume 2, CA5, Section 8, and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁴⁸.

⁴⁶HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁴⁷HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁴⁸HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

- 5.3.19 For those receptors described in SES₁, further details are provided in Volume 2, CA5, Section 3. The baseline ecology report that accompanied SES₁ and AP₁ ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁴⁹.

Designated sites

- 5.3.20 There is one Ramsar Site of relevance to the assessment of the amendment, which is of international value. Midland Meres and Mosses Phase 1 Ramsar Site, covering an area of approximately 510.9ha, is designated for its nutrient-rich water bodies (meres), associated fringe habitats of reed swamp, fen carr and damp pasture, and quaking peat bog. The closest component unit of the Ramsar Site to the area subject to the amendment is Betley Mere Site of Special Scientific Interest (SSSI), approximately 1.1km north-east of the area subject to the amendment.
- 5.3.21 The land subject to the amendment is located within a Natural England Impact Risk Zone⁵⁰ for Betley Mere SSSI, which is of national value. Betley Mere SSSI, covering an area of approximately 29.4ha, is designated as one of the few natural standing waters in Staffordshire and occupies a shallow valley in glacial deposits, bound on three sides by extensive peat deposits on which a wide range of vegetation types have developed. The zonation from open water with floating-leaved aquatic plants through emergent reed swamp, fen and carr to mature fen woodland, is considered to be as complete an example of a wetland hydrosere⁵¹ as occurs in the county.
- 5.3.22 There is one Local Wildlife Site (LWS) of relevance to the assessment of the amendment, which is of county value. Randilow and Bunker Hill LWS, covering an area of approximately 105.2ha, comprises a number of arable fields, 15 water bodies, semi-natural neutral and marshy grassland, hedgerows and an area of lowland deciduous woodland and wet woodland. The site is considered to support an important breeding farmland bird assemblage, seven species of bat and great crested newt. The site is designated as an LWS for its bird and bat assemblages and for the areas of woodland present, including notable ground flora species. Randilow and Bunker Hill LWS is located partially within the area subject to the amendment.

Habitats

- 5.3.23 Habitats within the area subject to the amendment include broadleaved woodland, semi-improved neutral grassland, marshy grassland, improved grassland, amenity grassland, arable, hedgerows and water bodies. The habitats of relevance to the assessment of the amendment are described in further detail below.
- 5.3.24 Small areas of semi-natural broadleaved woodland are present within the area subject to the amendment. These are up to local/parish value.

⁴⁹HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

⁵⁰The Impact Risk Zones are a GIS tool developed by Natural England to make a rapid initial assessment of the potential risks to SSSIs posed by development proposals and indicate the types of development proposal which could potentially have adverse impacts.

⁵¹A hydrosere is a plant succession occurring in areas of freshwater that will over time, ultimately become woodland.

- 5.3.25 Areas of semi-improved neutral and marshy grassland present within the area subject to the amendment. These are of local/parish value.
- 5.3.26 The majority of the area subject to the amendment is arable land. Areas of arable land within Randilow and Bunker Hill LWS support notable fauna, as described below. However, the arable land itself is not considered to be a habitat of ecological value.
- 5.3.27 Hedgerows within the area subject to the amendment are predominantly species-rich. Hedgerows with at least 80% cover of native woody species is a habitat of principal importance and a conservation priority of the Cheshire BAP. These contribute towards a wider hedgerow network within the South Cheshire area that is of district/borough value.
- 5.3.28 Seven ponds occur within the area subject to the amendment. On a precautionary basis it is assumed that these qualify as habitats of principal importance as listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁵² and a conservation priority of the Cheshire Biodiversity Action Plan⁵³ (BAP). Each of these ponds is of up to district/borough value.

Species

- 5.3.29 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include bats, great crested newts, common amphibians, breeding birds, polecat, harvest mouse, European hedgehog and brown hare.
- 5.3.30 The main ES, as amended by SES₁, reported a bat assemblage associated with habitats around Checkley Brook and Checkley Lane. Field surveys in this area recorded low to moderate levels of activity for a diverse assemblage of rarer bat species around Checkley Brook and Checkley Lane including *Myotis* species, noctule, *Nathusius' pipistrelle*, *Leisler's bat* and *serotine*. A summer noctule roost was recorded along Checkley Brook and a further unidentified roost was also recorded from within the vicinity of Checkley Brook. One roost for an unknown species was recorded from the area and although no evidence of a maternity roost was recorded, the potential presence of a rarer bat species, given foraging records in the area, cannot be discounted. Additionally, one common pipistrelle roost was identified in buildings on Checkley Lane. The area subject to the amendment contains a number of trees with high potential to support roosting bats as well as potential foraging and commuting habitat. The bat assemblage includes several species of principal importance and species that are conservation priorities of the Cheshire BAP. The bat assemblage associated with habitats around Checkley Brook and Checkley Lane is of county value.
- 5.3.31 The main ES, as amended by SES₁, reported a great crested newt metapopulation⁵⁴ situated south-west of Checkley (AMP⁵⁵ 5.1). Field surveys determined the presence of great crested newt in eight ponds of 12 surveyed, within a network of 27 ponds

⁵² Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁵³ Cheshire Wildlife Trust, (2007), *Biodiversity Action Plans for Priority Species and Habitats in Cheshire*. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/BAP%2olist%20-%20updated%20April%202011.pdf>

⁵⁴ A metapopulation is a group of spatially separated populations which interact. Metapopulations are described in BID-EC-007-000, Ecological baseline data - amphibian and pond surveys.

⁵⁵ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered on the Phase 2a scheme when following the route from the London end.

assumed to be used by this metapopulation. Seven ponds within the metapopulation are within the area subject to the amendment. Terrestrial habitats likely to be used by this metapopulation occur within the area subject to the amendment, in the form of hedgerows. Great crested newt is an Annex 2 species⁵⁶, a species of principal importance, and a conservation priority of the Cheshire BAP. The great crested newt population situated south-west of Checkley is of county value.

- 5.3.32 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the South Cheshire area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout South Cheshire are of local/parish value.
- 5.3.33 The main ES reported that the area within and surrounding the area subject to the amendment supported a total of 41 bird species that included six Red List species⁵⁷. The species recorded are typical of farmland habitats and were present in low numbers. The recorded breeding bird assemblage included 10 species that are listed on the Cheshire Wildlife Trust LWS selection criteria⁵⁸ and are of principal importance. Farmland birds, as a group, are a conservation priority of the Cheshire BAP. The wider area also supports two breeding pairs of yellow wagtail. There are records of three additional notable species provided by Cheshire Wildlife Trust in the Randilow and Bunker Hill LWS citation, comprising tree sparrow, grey partridge and corn bunting. The breeding bird assemblage is of county value.
- 5.3.34 The main ES reported populations of common reptile species such as grass snake and slow-worm, identified through desk study records, as being potentially present at low numbers throughout the South Cheshire area. Grass snake and slow-worm are both species of principal importance. Grass snake is also a conservation priority of the Cheshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.
- 5.3.35 The main ES, as amended by SES₁, reported at least five social groups of badger throughout the South Cheshire area, identified through field surveys. The area subject to the amendment includes suitable sett building and foraging habitats for badger. The badger populations throughout the South Cheshire area are of local/parish value.
- 5.3.36 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog, and brown hare, identified through desk study records, as being potentially present throughout the South Cheshire area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

⁵⁶ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation (SAC).

⁵⁷ International Union for Conservation of Nature and Natural Resources Red List of Threatened Species. Available at: <http://www.iucnredlist.org/>

⁵⁸ Cheshire Wildlife Trust, (2012), Local Wildlife Site Selection Criteria for the Cheshire region. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/Cheshire%20LWS%20selection%20criteria.pdf>

Future environmental baseline

Construction (2020)

- 5.3.37 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.3.38 The assessment assumes implementation of the measures set out within the draft CoCP.
- 5.3.39 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.3.40 All of the effects within this section are reported in the absence of other mitigation.

Designated sites

- 5.3.41 No effects on Midland Meres and Mosses Ramsar Site and a component unit, Betley Mere SSSI, were reported within the main ES. The Ramsar Site and SSSI will not be directly affected by the amendment. The closest point of construction of the amendment will be associated with the undergrounding of the overhead line to the north of Checkley Lane, approximately 1.1km to the south-west of the SSSI. The Ramsar Site and SSSI are designated for their wetland habitats. The amendment will not give rise to new or different significant effects upon the designated features of the Ramsar Site or SSSI.
- 5.3.42 SES2 reported the loss of an area of approximately 58.3ha from Randilow and Bunker Hill LWS, covering an area of approximately 105.2ha, comprises a number of arable fields, 15 water bodies, semi-natural neutral and marshy grassland, hedgerows and an area of lowland deciduous woodland and wet woodland, which would result in a permanent adverse effect that is significant at the county level. The amendment will result in an additional loss of approximately 2.3ha of arable land from within the LWS. This habitat is not a reason for designation of the LWS and its loss will not significantly impact the notable fauna for which the LWS is designated. The amendment will not give rise to a new or different significant effect on Randilow and Bunker Hill LWS and will not change the level of significance of the effect reported in the main ES.

Habitats

- 5.3.43 The main ES reported the loss of ponds within the land required for the original scheme. The loss was reported in the main ES as a permanent adverse effect on the conservation status of ponds that is significant, in each case, at up to district/borough level. The amendment will not result in the loss of additional ponds and will not give rise to a new or different significant effect on ponds.
- 5.3.44 It is not likely that any effects on habitats of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects

arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Species

- 5.3.45 The main ES reported a direct loss of bat roosts and loss and fragmentation of foraging and commuting habitat used by the assemblage of bats associated with habitats around Checkley Brook and Checkley Lane, which would result in a permanent adverse effect that is significant at county level. The amendment will result in the loss of 2.3ha of arable land which is a habitat that offers negligible foraging and commuting opportunities for bats. The amendment will not therefore give rise to any new or different significant effects on the bat assemblage associated with habitats around Checkley Brook and Checkley Lane, and will not change the level of significance of the effect as reported in the main ES.
- 5.3.46 The main ES, as amended by SES1, reported the loss of eight ponds and associated terrestrial habitat that are known or assumed to be used by the great crested newt metapopulation situated south-west of Checkley (AMP 5.1), which would result in a permanent adverse effect that is significant at up to county level. The amendment will result in the loss of 2.3ha of arable land which is a habitat that offers negligible foraging and dispersal opportunities for great crested newts. The amendment will not therefore give rise to any new or different significant effects on the great crested newt metapopulation situated south-west of Checkley, and will not change the level of significance of the effect as reported in the main ES, as amended by SES1.
- 5.3.47 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.3.48 No other mitigation measures are required in relation to this amendment.

Summary of likely residual significant effects

- 5.3.49 The amendment will not give rise to a new or different likely residual significant effect and will not change the level of significance of the effects reported in the main ES as amended by SES1.

Cumulative effects

- 5.3.50 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.4 Additional land for the diversion of a National Grid 1050mm diameter high pressure gas pipeline and a new utility compound at Den Lane (AP2-005-004)

- 5.4.1 The Bill provides for the permanent diversion of a National Grid 1,050mm diameter high pressure gas pipeline, for 750m in length. The diversion would cross under the HS2 route, 250m south-east of the Den Lane central underbridge and crossing under Den Lane to the north-east. See Map CT-06-236, F6 to C4 in the main ES Volume 2, CA5 Map Book.
- 5.4.2 An area of grassland habitat creation (5.4ha), including six ecological mitigation ponds, would be created during construction of the diversion. This area would be enclosed by hedgerow habitat creation following construction. See Map CT-06-236, H6 to F8, in the main ES Volume 2, CA5 Map Book.
- 5.4.3 Since submission of the Bill, further engagement with the utility provider has identified a requirement for the diversion of the National Grid 1,050mm diameter high pressure gas pipeline to be amended, and provide a new utility compound for the management of the diversion works.
- 5.4.4 This amendment will include realignment of a 900m section of the 1,050mm diameter gas pipeline, passing under the HS2 route 175m south-east of Den Lane Central underbridge.
- 5.4.5 The southern side connection point will be repositioned 200m south of the location identified in the original scheme, within an area of grassland habitat creation. See Map CT-06-236, G7, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.4.6 From the southern side connection point, the pipeline will run in a north-west direction before continuing north-east to cross beneath the HS2 route, 175m south-east of Den Lane central underbridge. The pipeline will cross beneath Den Lane, north-east of the HS2 route, 250m north of Den Lane central underbridge. See Map CT-06-236, G7 to C4, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.4.7 The northern side connection point will be repositioned 25m south of the location identified in the original scheme, bringing it closer to the landscape earthworks associated with the HS2 southbound spur. See Map CT-06-236, C4, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.4.8 Construction of the southern side connection point will delay the provision of an area of grassland habitat creation, identified in the original scheme as advance planting during construction. The grassland habitat creation area will be provided between two and four years later than planned in the original scheme. The grassland habitat creation will be reduced by 745m² from 5.4ha in the original scheme to 5.3ha in the AP2 revised scheme. In addition, six ecological mitigation ponds included in the original scheme will be relocated: four ponds will be located 100m south-west of Blakenhall Spur culvert; and two ponds will be located 250m west of Blakenhall Spur culvert. See Map CT-06-236, H7 to G8, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.4.9 The realigned pipeline diversion crosses Blakenhall Footpath 9, which will require diversion during construction. See Map CT-05-236, E5, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.4.10 The diversion works will be undertaken over a period of six months, commencing in 2021.
- 5.4.11 A new utility compound (Den Lane utility compound B) will be provided for the management of the gas pipeline diversion works, as well as works associated with amendment AP2-005-005. Den Lane utility compound B will be located 300m north-west of Den Lane central underbridge. See Map CT-05-236, C6 to B5, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.4.12 The utility compound will be operational for one year and six months, commencing in 2021, and will support an average of 15 workers per day (20 workers at peak times). Access to the compound would initially be from Den Lane at site set up and thereafter from the A500 Shavington Bypass and site haul routes.
- 5.4.13 The land required for realignment of the National Grid 1,050mm diameter high pressure gas pipeline diversion is outside the limits of the Bill and will result in a requirement for an additional 0.8ha of land, some of which will be from the following agricultural land holdings: Ash Tree Farm (CA5/3) and Lower Den Farm (CA5/2). See Map CT-05-236, G7 to E7 and C4 to C3 in the SES2 and AP2 ES, Volume 2 CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.4.14 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for traffic and transport. This is reported within this section.
- 5.4.15 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Traffic and transport

Scope, assumptions and limitations

- 5.4.16 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report (SMR)⁵⁹ and SMR Addendum⁶⁰ of the main ES.
- 5.4.17 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for traffic and transport.

⁵⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.4.18 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.4.19 The baseline traffic and transport information for the South Cheshire area is as described in Volume 2, CA5, Section 14 of the main ES.
- 5.4.20 Den Lane and Wrinehill Road are local roads in the South Cheshire area. Den Lane connects Wybunbury with Wrinehill along Wrinehill Road across the West Coast Main Line (WCML).
- 5.4.21 There are a number of PRoW which cross the area including Blakenhall Footpath 9 which connects Wrinehill Road with Mill Lane. The surveys undertaken to inform the assessment showed that there were fewer than 10 people a day recorded on Blakenhall Footpath 9.

Future environmental baseline

Construction (2023)

- 5.4.22 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.4.23 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁶¹ are required.

Assessment of impacts and effects

- 5.4.24 The main ES showed that the utility works would cross Blakenhall Footpath 9 and Wrinehill Road. This would result in disruption to the users of Blakenhall Footpath 9 and Wrinehill Road. However, as any disruption would be of short duration and limited to where the utility crosses Blakenhall Footpath 9 and Wrinehill Road, the effect on non-motorised users would not be significant.
- 5.4.25 The amendment realigns the utility diversion but does not change the crossing of Blakenhall Footpath 9 and Wrinehill Road or the likely duration of local traffic management works.
- 5.4.26 The amendment will therefore not give rise to any new or different likely significant effects on users of Blakenhall Footpath 9 and Wrinehill Road and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID-TR-001-000 SES2 AP2 that accompanies the SES2 and AP2 ES.

⁶¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Cumulative effects

- 5.4.27 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

5.5 Additional land for the diversion of a National Grid 900mm diameter high pressure gas pipeline at Den Lane (AP2-005-005)

- 5.5.1 The Bill provides for the permanent diversion of a 900mm National Grid high pressure gas pipeline, for 850m in length. The diversion would cross beneath the HS2 route, 65m north of Den Lane central underbridge. See Map CT-06-236, D7 to D5, in the main ES Volume 2, CA5 Map Book.
- 5.5.2 The south side of the diversion would be located to the south-east of Blakenhall north spur cutting and Den Lane central underbridge. The north side of the diversion would be located to the north-east of the HS2 south spur, and north of Den Lane central underbridge. See Map CT-06-236, E7 to C4 in the main ES, Volume 2 CA5 Map Book. Diversion of the pipeline would take nine months to complete, commencing in 2021, and would be managed from Blakenhall Northbound Spur embankment satellite compound. The Blakenhall Northbound Spur embankment satellite compound and two temporary material stockpiles would be located on the western side of the HS2 route, adjacent to Mill Lane. See Map CT-05-236, D7 to C8 in the main ES, Volume 2 CA5 Map Book.
- 5.5.3 Since submission of the Bill, further engagement with the utility provider has identified a requirement to amend the diversion proposed in the original scheme, providing a revised alignment of the pipeline diversion, to cross under the HS2 route 175m south-east of Den Lane central underbridge. The length of the diverted section of pipeline would be extended by 50m to a total 900m in length. See Map CT-05-236, E5 to E7, in the SES2 and AP2 ES, Volume 2 CA5 Map Book.
- 5.5.4 The south side of the diversion will remain in the same location as identified in the original scheme, 250m south-west of Den Lane central underbridge. See Map CT-06-236, E7, in the SES2 and AP2 ES Volume 2, CA5 Map Book. The pipeline will extend along the south-west side of the HS2 route for a further 175m than proposed in the original scheme and will cross beneath the HS2 route 225m north-west of Den Lane central underbridge. At the north end of the diversion, the diversion will end at a point 100m to the south of the location proposed in the original scheme. See Map CT-05-236, D7 to C4, in the SES2 and AP2 ES, Volume 2 CA5 Map Book.
- 5.5.5 The pipeline diversion will cross the area identified in the original scheme for the Blakenhall northbound spur embankment compound and two temporary material stockpiles. The satellite compound will be relocated to the south, into the location occupied by the temporary material stockpiles in the original scheme. One of the temporary stockpiles will be moved north, to the location occupied by the satellite compound in the original scheme. The second temporary material stockpile will no longer be required. See Map CT-05-236, D8 to C7, in the SES2 and AP2 ES, Volume 2 CA5 Map Book.

- 5.5.6 The diversion works will be undertaken over a period of six months, commencing in 2022 and will be managed from Den Lane utility compound B, which will be provided as part of AP2-005-004. This compound will support an average of 15 workers per day (20 workers at peak times) and will be operational for one year and six months, commencing in 2021. Access to the compound would initially be from Den Lane at site set up and thereafter from the A500 Shavington Bypass and site haul routes. See Map CT-05-236, C6 to B5, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.5.7 The revised diversion of the National Grid 900mm high pressure gas pipeline is outside the limits of the Bill and will require a change to Bill powers and result in a requirement for an additional 0.5ha of land, some of which will be from the following agricultural land holdings: Ash Tree Farm (CA5/3) and Lower Den Farm (CA5/2). See Map CT-06-236, G7 to E7 and D5 to C4 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.5.8 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, is reported in Section 7.
- 5.5.9 This AP2 amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.6 Additional land and a change to Bill powers for a new access to Lower Den Farm and the relocation of Den Lane Welfare satellite compound (AP2-005-006)

- 5.6.1 The Bill provides for the diversion of Blakenhall Bridleway 8, 75m to the north-west of its existing alignment, crossing the West Coast Main Line (WCML) via the Blakenhall Bridleway 8 accommodation overbridge. The existing Lower Den Farm accommodation overbridge crossing over the WCML would be demolished and access to Lower Den Farm would be provided via the realigned Blakenhall Bridleway 8 accommodation overbridge. See Map CT-05-236, C1 to C2, in the main ES Volume 2, CA5 Map Book.
- 5.6.2 The AP1 revised scheme (AP1-005-102: Additional land for the permanent diversion of United Utilities 63mm water mains between the WCML and Den Lane) would provide additional land for the permanent diversion of United Utilities 63mm water mains between the WCML and Den Lane. See Map CT-06-236, F1 to E2, and Map CT-06-236-R1, H9 to E10, in the SES1 and AP1 ES Volume 2, CA5 Map Book. In addition, the AP1 revised scheme (AP1-005-105: Additional land for a new temporary Scottish Power Energy Networks power line to Blakenhall cutting satellite compound) would also provide additional land for a new temporary Scottish Power Energy Networks power line to Blakenhall cutting satellite compound. See Map CT-05-236, D1 to C1, in the SES1 and AP1 ES Volume 2, CA5 Map Book.
- 5.6.3 Further engagement with Lower Den Farm has identified the requirement to provide a new agricultural access to the farm from Den Lane, adjacent to the east side of the WCML. The new agricultural access will be 690m in length and 3.5m wide, and will require hedgerow habitat creation on both sides, of 1.3km in total length. This amendment will also require the relocation of Den Lane Welfare satellite

compound, 50m south-east of the location in the original scheme. See Map CT-05-236-R1, G9 to C10 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.6.4 An existing overhead power line located adjacent to the new agricultural access to Lower Den Farm will be diverted 430m underground within the new agricultural access. See Map CT-05-236-R1, G9 to D10 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.6.5 The amendment will be constructed over a period of one month, commencing in 2021. Works will be managed from the Blakenhall cutting satellite compound.
- 5.6.6 The land required for the provision of a new agricultural access to Lower Den Farm is outside of the limits of the Bill and will result in a change to Bill powers and a requirement for an additional 1.2ha of land, some of which will be from Lower Den Farm (CA5/2). See Map CT-05-236-R1, G9 to C10 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.6.7 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: community; and landscape and visual. This is reported within this section.

Community

- 5.6.8 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report (SMR)⁶² and SMR Addendum⁶³ of the main ES.
- 5.6.9 This amendment has the potential to result in new or different significant temporary construction and operational effects for community only. Therefore, there is no assessment of permanent construction effects in this assessment.

Existing environmental baseline

- 5.6.10 The baseline community information for the South Cheshire area is as described in Volume 2, CA5, Section 6 of the main ES.
- 5.6.11 Between the settlements of Wrinehill and Blakenhall are a number of sparsely located, detached rural farm properties along Den Lane and Checkley Lane.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.6.12 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

⁶² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Effects arising during construction

Avoidance and mitigation measures

- 5.6.13 No avoidance or mitigation measures, additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁶⁴ are identified.

Assessment of impacts and effects

- 5.6.14 The main ES reported a minor adverse temporary non-significant effect as a result of the loss of land from the driveway of Lower Den Farm.
- 5.6.15 The amendment will permanently require an additional area of land from part of the residential garden and driveway at Lower Den Farm. The land will be required to provide a new accommodation access track to link Lower Den Farm and Den Lane, which is to be provided on the east side of the WCML. The permanent loss of these small areas of land will not impact on the ability of the residents to use their dwellings and access will be maintained to the properties throughout the construction works. The amendment will give rise to a different likely residual effect on Lower Den Farm by changing the land required from temporary to permanent. However, this will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-000.

Cumulative effects

- 5.6.16 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

Effects arising from operation

- 5.6.17 The main ES did not report any significant in-combination effects on Lower Den Farm during operation. This amendment has been assessed for potential visual effects to determine if these give rise to a new significant in-combination effect on community resources in this area. The assessment has concluded that this amendment will not give rise to any new likely residual significant effects. The amendment will therefore not give rise to any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.6.18 There are no new or different likely significant cumulative effects for community as a result of the amendment acting in-combination with any other AP2 amendments or AP1 amendments.

⁶⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

Landscape and visual

Scope, assumptions and limitations

- 5.6.19 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.6.20 The amendment has the potential to give rise to new or different significant construction and operational effects for visual only. Therefore, there is no construction and operational assessment for landscape.

Existing environmental baseline

- 5.6.21 The baseline landscape and visual information for the South Cheshire area is as described in Volume 2, CA5, Section 11 of the main ES.

Visual baseline

- 5.6.22 The amendment to provide a new access to Lower Den Farm and relocate Den Lane Welfare satellite compound has the potential to affect one viewpoint, which is described in Volume 5: Appendix LV-001-005 of the main ES and summarised below.

View south-west from WCML overbridge (viewpoint 025.02.007)

- 5.6.23 This viewpoint is located in an area of gently rolling pastures which show evidence of field amalgamation and loss of hedgerows, but retains a number of former field boundary trees. The WCML infrastructure and tall brick-built overbridge forms the foreground view, with trees and dense undergrowth on the rail embankments. Beyond the WCML, rolling pastures continue into the middle distance with Higher Den Farm visible beyond the pastures. This rolling farmland with mature trees merges into long distance views. A single wind turbine and a pylon line are skyline features.

Future environmental baseline

Construction (2020) and operation (2027)

- 5.6.24 The future baseline for construction in 2020 and operation in 2027 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.6.25 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View south-west from WCML overbridge (viewpoint 025.02.007)

- 5.6.26 The main ES reported a major adverse significant effect at viewpoint 025.02.007. This was due to close distance views of construction activity associated with Blakenhall Bridleway 8 accommodation overbridge earthworks, demolition of the existing overbridge, and the presence of the Blakenhall cutting satellite compound, material stockpiles, construction equipment and movement of construction vehicles.

- 5.6.27 Construction of the amendment to provide a new 3.5m wide accommodation access track linking Lower Den Farm with Den Lane, and relocate Den Lane Welfare satellite compound will introduce new construction activity into the view. The effect of this will, however, be minimal when seen alongside the wider construction activity in this area, which will be extensive. The amendment will therefore give rise to a different significant effect. However, the level of significance of the effect will remain major adverse significant as reported in the main ES.
- 5.6.28 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-005 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Mitigation and residual effects

Other mitigation measures

- 5.6.29 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.6.30 The amendment to provide a new access to Lower Den Farm and relocate Den Lane Welfare satellite compound will give rise to a different likely residual significant construction effect on the view south-west from WCML overbridge (viewpoint 025.02.007). The effect will increase but will remain major adverse significant, and therefore will not change the level of significance of the effect reported in the main ES.

Cumulative effects

- 5.6.31 There are no new or different likely significant cumulative effects for landscape or visual receptors as a result of construction of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Permanent effects arising during operation

Avoidance and mitigation measures

- 5.6.32 No avoidance or mitigation measures additional to those reported in the main ES are identified.

Assessment of impacts and effects

View south-west from WCML overbridge (viewpoint 025.02.007)

- 5.6.33 The main ES reported a moderate adverse significant effect at year 1, reducing to a minor adverse non-significant effect at year 15. This was due to close distance views of the realigned section of Blakenhall Bridleway 8 and Blakenhall Bridleway 8 accommodation overbridge, and associated bridge embankments. At year 15, however the maturing mitigation planting would achieve greater screening and integration of the overbridge and its embankments within the surrounding landscape and the effect would reduce.
- 5.6.34 At year 1, the amendment to provide a new 3.5m wide accommodation access track linking Lower Den Farm with Den Lane, and relocate Den Lane welfare satellite compound will be visible to the east of the WCML. The effect of this on the view will

be minimal when seen alongside the wider changes in this area, which include removal of the WCML overbridge, from where the viewpoint is taken.

The amendment will therefore give rise to a different significant effect. However, the level of significance of the effect will remain moderate adverse significant as reported in the main ES. At year 15 and year 60, the level of significance of the effect will remain non-significant as reported in the main ES.

- 5.6.35 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-005 and the SES2 and AP2 ES Volume 5: Landscape and visual Map Book.

Cumulative effects

- 5.6.36 There are no new or different likely significant cumulative effects for landscape or visual receptors as a result of operation of the amendment acting in combination with any other AP2 amendments or the AP1 amendments.

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

- 5.6.37 The amendment will give rise to a different likely residual significant construction effect on viewpoint 025.02.007. However, this will not change the level of significance of the effects reported in the main ES.

5.7 Change in Bill powers for the realignment of the Blakenhall Bridleway 8 and associated accommodation overbridge (AP2-005-007)

- 5.7.1 The Bill provides for the permanent diversion of a combined accommodation access between HS2, Network Rail access and the Blakenhall Bridleway 8, 75m to the north-west of its existing alignment, crossing the West Coast Main Line (WCML) via the replacement Blakenhall Bridleway 8 accommodation overbridge, which would be relocated 63m to the west of the existing Blakenhall Bridleway 8 overbridge alignment. The diversion would result in the access to Lower Den Farm increasing by 26m in length to 321m. See Map CT-05-236, C1 to C2, in the main ES Volume 2, CA5 Map Book.
- 5.7.2 The Bill also provides for construction of the Blakenhall New Bridleway and maintenance access road, to the south-west of the WCML, extending from Blakenhall Bridleway 8 accommodation overbridge to the Blakenhall Bridleway 12 east accommodation overbridge. See Map CT-05-236, C2 to A3 and Ct-05-237, J2 to D5, in the main ES Map Book
- 5.7.3 Since submission of the Bill, a requirement has been identified for the relocation of the Blakenhall Bridleway 8 accommodation overbridge to avoid diverting the existing fuel pipeline that passes under the WCML. The overbridge will be relocated 112m to the north-west of the existing Lower Den Farm bridge, moving a further 49m north-west from the relocation provided for in the Bill. See Map CT-05-236, C2 to C1 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.7.4 In addition, further engagement with Network Rail has identified a requirement to increase the area of the Betley Crossover satellite compound, south-west of the WCML, by 0.1ha to a total of 0.2ha. As a result of this increase, a 135m section of the

south-east side of the Blakenhall Bridleway 8 will be relocated 37m to the west. The realignment of the Blakenhall Bridleway 8 will increase the journey length by 46m. Shared accommodation access between HS2, Network Rail and Blakenhall New Bridleway will move 61m west of the existing access alignment. Network Rail access to the south-west of the WCML will be maintained to an existing Network Rail compound. See Map CT-06-236, C2 to B2 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.7.5 Landscape mitigation planting to the south-east of Blakenhall Bridleway 8 accommodation overbridge will help integrate the amendment into the surrounding landscape, with hedgerows to be repositioned to follow the edge of the verge line of the revised alignment of Blakenhall Bridleway 8. See Map CT-06-236, C2 to B2 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.7.6 The relocation of the overbridge and the realignment of the bridleway will be constructed over a period of nine months, commencing in 2021. Demolition of the existing bridge will take three months, commencing in 2022. The works will be managed from Blakenhall cutting satellite compound.
- 5.7.7 The land required for the relocation of Blakenhall Bridleway 8 accommodation overbridge and realignment of Blakenhall Bridleway 8 is outside of the limits of the Bill will result in a requirement for an additional 230m² of land, some of which will be from Lower Den Farm (CA5/2). See Map CT-05-236, C2 to B2, C2 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.7.8 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.8 Additional land required for material stockpile relocations at Lower Den Farm and the reorientation of Blakenhall cutting satellite compound (AP2-005-008)

- 5.8.1 The Bill provides for the temporary storage of surplus excavated material in stockpiles and the Blakenhall cutting satellite compound, adjacent to the east of the West Coast Main Line (WCML). Blakenhall cutting satellite compound would be located 150m north-west of Lower Den Farm, and would be used for civil engineering works during construction. Two material stockpile areas would be required, one either side of Blakenhall cutting satellite compound. See Map CT-05-236, C2 to B1, in the main ES Volume 2, CA5 Map Book.
- 5.8.2 Since submission of the Bill, further engagement with Lower Den Farm has identified the requirement to relocate the two temporary material stockpile areas and re-orientate the Blakenhall cutting satellite compound, to reduce the land required temporarily from Lower Den Farm and enable its continued operation. The two material stockpiles will be relocated to the west of the WCML and 200m west of Lower Den Farm. The relocated material stockpiles will be divided into four areas to protect the existing mature trees around the perimeter and will be linked to provide safe construction access. Blakenhall cutting satellite compound will remain to the east of the WCML, and will be reoriented, approximately 90 degrees, adjacent to the

WCML. See Map CT-05-236, C4 to B1, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.8.3 The amendment will be constructed over a period of up to three years, commencing in 2020. Works will be managed from Blakenhall cutting satellite compound.
- 5.8.4 The land required for relocation of the material stockpiles is outside of the limits of the Bill, and will result in a requirement for an additional 1.6ha of land, some of which will be from Lower Den Farm (CA5/2). See Map CT-05-236, C4 to B1, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.8.5 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: community; landscape and visual; and water resources and flood risk. This is reported within this section.

Community

Scope, assumptions and limitations

- 5.8.6 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the Scope and Methodology Report (SMR)⁶⁵ and SMR Addendum⁶⁶ of the main ES.
- 5.8.7 This amendment has the potential to result in new or different significant temporary construction effects only. Therefore, there is no permanent construction or operational assessment for community.

Existing environmental baseline

- 5.8.8 The baseline community information for the South Cheshire area is as described in Volume 2, CA5, Section 6 of the main ES.
- 5.8.9 Between the settlements of Wrinehill and Blakenhall are a number of sparsely located, detached rural farm properties along Den Lane and Checkley Lane.

Future environmental baseline

Construction (2020)

- 5.8.10 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

⁶⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Effects arising during construction

Avoidance and mitigation measures

- 5.8.11 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁶⁷ are required.

Assessment of impacts and effects

- 5.8.12 The additional land temporarily required for material stockpile relocations at Lower Den Farm and the reorientation of Blakenhall cutting satellite compound was not included in the original scheme and therefore the main ES did not report any significant in-combination effects associated with it. This amendment has been assessed for potential visual effects to determine if these give rise to a new significant in-combination effect on community resources in this area. The assessment has concluded that this amendment will not give rise to any new likely residual significant effects. The amendment will therefore not give rise to any new or different likely residual significant effects and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.8.13 There are no new or different likely significant cumulative effects for community receptors as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Landscape and visual

Scope, assumptions and limitations

- 5.8.14 The assessment scope, key assumptions and limitations for landscape and visual are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.8.15 The amendment has the potential to give rise to new or different significant construction effects for visual only. Therefore, there is no construction assessment for landscape and no operational assessment for landscape and visual.

Existing environmental baseline

- 5.8.16 The baseline landscape and visual information for the South Cheshire area is as described in Volume 2, CA5, Section 11 of the main ES.

Visual baseline

- 5.8.17 The amendment to acquire additional land for material stockpile relocations at Lower Den Farm and the reorientation of Blakenhall cutting satellite compound has the potential to affect one viewpoint, which is described in Volume 5: Appendix LV-001-005 of the main ES and summarised below.

⁶⁷ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

View south-west from WCML overbridge (viewpoint 025.02.007)

- 5.8.18 This viewpoint is located in an area of gently rolling pastures which show evidence of field amalgamation and loss of hedgerows, but retains a number of former field boundary trees. The WCML infrastructure and tall brick-built overbridge forms the foreground view with trees and dense undergrowth on the rail embankments. Beyond the WCML, rolling pastures continue into the middle distance with Higher Den Farm visible beyond the pastures. This rolling farmland with mature trees merges into long distance views. A single wind turbine and a pylon line are skyline features.

Future environmental baseline

Construction (2020)

- 5.8.19 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Temporary effects arising during construction

Avoidance and mitigation measures

- 5.8.20 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

View south-west from WCML overbridge (viewpoint 025.02.007)

- 5.8.21 The main ES reported a major adverse significant effect at viewpoint 025.02.007. This was due to the close distance views towards construction activity associated with the Blakenhall Bridleway 8 accommodation overbridge and earthworks, demolition of the existing overbridge, and presence of Blakenhall cutting satellite compound, material stockpiles, construction equipment and movement of construction vehicles.
- 5.8.22 The amendment will require additional land for material stockpile relocations at Lower Den Farm and the reorientation of Blakenhall cutting satellite compound. This will introduce new construction activity into the view. However, the effect of this will be minimal when seen alongside the wider construction activity in this area, which will be extensive. The amendment will therefore not give rise to a new or different significant effect and will not change the major adverse significant effect reported in the main ES.
- 5.8.23 For further information see SES2 and AP2 ES Volume 5: Appendix LV-001-005.

Cumulative effects

- 5.8.24 There are no new or different likely significant cumulative effects for landscape or visual receptors as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Water resources and flood risk

Scope, assumptions and limitations

- 5.8.25 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, SMR and SMR Addendum of the main ES, and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.8.26 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.8.27 The baseline water resources information for the South Cheshire area is as described in Volume 2, CA5, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in Volume 5: Appendix WR-002-005, Appendix WR-003-005 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.8.28 This amendment is located near Mere Gutter, which is a high value receptor. This amendment will involve construction activities of a nature and scale that have potential water quality implications.

Future environmental baseline

Construction (2020)

- 5.8.29 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.8.30 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect the general water environment. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft CoCP.
- 5.8.31 Therefore, the amendment will not give rise to a new or different significant effect and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.8.32 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.9 Additional land and a change to Bill powers for the underground diversion of a section of a Scottish Power Energy Networks 132KV overhead line at Blakenhall (AP2-005-009)

- 5.9.1 The Bill provides for the permanent raising of a 750m section of a Scottish Power Energy Networks 132kV overhead line to cross over the HS2 route in a south to north direction, 625m north of the Den Lane Central underbridge. C10 to A4, Map CT-06-237, J8 to E1, and CT-06-237-R1, E10 to D9, in the main ES Volume 2, CA5 Map Book. Raising the overhead line would take nine months to complete, commencing in 2021, and would be managed from Blakenhall Northbound Spur embankment satellite compound.
- 5.9.2 Since submission of the Bill, further engagement with the utility provider has identified a requirement to amend the diversion proposed in the original scheme, replacing it with an underground diversion. The overhead line will be diverted underground for a distance of 2.3km, crossing under the HS2 route and West Coast Main Line (WCML), west of Wrinehill Road and Mill Lane and reconnect to the existing overhead line to the east of the WCML. Two existing pylons will be removed.
- 5.9.3 The south side of the underground diversion will connect to the existing overhead line, approximately 150m north-west of the Mill Lane and Wrinehill Road junction, and will run within Wrinehill Road before heading north-east along the Blakenhall Bridleway 12 diversion. See Map CT-06-237, I7 to D6, in the SES2 and AP2 ES Volume 2, CA5 Map Book. The underground diversion will continue east, crossing the HS2 route via the Blakenhall Bridleway 12 West accommodation underbridge, Blakenhall Bridleway 12 Central accommodation overbridge, and Blakenhall Bridleway 12 East accommodation overbridge. See Map CT-06-237, D7 to D5, in the SES2 and AP2 ES Volume 2, CA5 Map Book. On the east side of the WCML and HS2 route, the diversion will continue south-east, crossing underneath the WCML before re-connecting into the existing overhead line. See Map CT-06-237, D5 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.9.4 Two existing pylons, which carry the existing overhead line along the section to be diverted underground, will be removed. The existing pylons at either end of the underground diversion will be replaced by sealing end towers to connect the existing overhead sections to the underground cables. A permanent access track, 80m in length, will be provided for access to the sealing end tower at the south side of the diversion and an access track, 200m in length, will be provided for access to the sealing end tower at the north side of the diversion.
- 5.9.5 This AP2 amendment will result in an overall reduction in grassland habitat creation of 530m² adjacent to Blakenhall Bridleway 12 diversion. Furthermore, there will be an overall reduction in hedgerow habitat creation of 55m along Blakenhall Bridleway 12 diversion.
- 5.9.6 The diversion works will be undertaken over a period of nine months, commencing in 2021.
- 5.9.7 The works will be managed from Den Lane utility compound A, which will be provided as part of AP2-005-003. This compound will support an average of 15 workers per day

(20 workers at peak times) and will be operational for one year and three months, commencing in 2021. Access to the compound would be from Den Lane and the A500 Shavington Bypass and site haul routes. See Map CT-05-236, F6, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

- 5.9.8 The land required for the underground diversion of the Scottish Power Energy Networks 132kV overhead line is outside the limits of the Bill and will result in a change to Bill powers and a requirement for an additional 0.7ha of land, some of which will be from Oakhanger Hall (CA5/5). See Map CT-05-237, I7 to H10 and G3 to F2 in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.

Topics included in the AP2 assessment

- 5.9.9 This amendment is considered to require a reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for water resources and flood risk. This is reported within this section.

Water resources and flood risk

Scope, assumptions and limitations

- 5.9.10 The assessment scope, key assumptions and limitations for water resources and flood risk are as set out in Volume 1, the Scope and Methodology Report (SMR)⁶⁸ and SMR Addendum⁶⁹ of the main ES, and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.9.11 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for water resources and flood risk.

Existing environmental baseline

- 5.9.12 The baseline water resources information for the South Cheshire area is as described in Volume 2, CA5, Section 15 of the main ES. Further details relating to water resources and flood risk for this area are provided in the Volume 5: Appendix WR-002-005, Appendix WR-003-005 and the Volume 5: Water resources and flood risk Map Book of the main ES.
- 5.9.13 This amendment will involve construction activities of a nature and scale that have potential water quality implications for downstream watercourses including Wistaston Brook, which is a high value receptor.

⁶⁸ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁶⁹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Future environmental baseline

Construction (2020)

- 5.9.14 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Volume 5: Appendix CT-004-000.

Effects arising during construction

- 5.9.15 The main ES reported no significant effects on surface water quality due to site runoff and increased pollution risk in the vicinity of this amendment. This amendment has the potential to give rise to temporary adverse impacts on surface water quality which could affect abstractions and the water environment more generally. However, the amendment will be constructed in accordance with the measures specifically designed to safeguard water resources outlined in the draft Code of Construction Practice (CoCP)⁷⁰.
- 5.9.16 The amendment will not give rise to a new or different significant effects and will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.9.17 There are no new or different likely significant cumulative effects for water resources and flood risk as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

5.10 Additional land required to improve visibility for traffic using the junction of Wrinehill Road and an accommodation track (AP2-005-010)

- 5.10.1 The Bill provides for the permanent diversion of the Blakenhall Bridleway 12 along a new shared HS2 accommodation access, to the south of the Crewe South cutting, west of Gonsley Green Farm. Blakenhall Bridleway 12 would be diverted 350m west of its existing alignment, to join Wrinehill Road 250m north-west of its existing alignment to the south of the HS2 route. Hedgerow habitat creation would be provided along both sides of the shared accommodation access track to provide habitat connectivity. See Map CT-06-237-L1, G1 to F2, in the main ES Volume 2, CA5 Map Book.
- 5.10.2 Since submission of the Bill, a requirement has been identified to improve visibility for HS2 vehicles turning into Wrinehill Road from the shared HS2 accommodation access track. To improve visibility splays for traffic using the junction, 250m of hedgerow habitat creation, included in the original scheme, will be removed and replaced with 230m of hedgerow habitat creation that will be repositioned so that it is set back from the junction by 20m. There will be a loss of 20m of hedgerow habitat from either side of the new junction and no change to the layout of the junction from the original scheme. See Map CT-06-237-L1, G1 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

⁷⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.10.3 This amendment will be constructed over a period of three months, commencing in 2020 and managed from the Crewe South cutting satellite compound.
- 5.10.4 The land required for relocation of the hedgerow to improve the visibility for traffic users of the junction is outside the limits of the Bill, and results in a requirement for an additional 430m² of land, some of which will be from the following agricultural land holdings: Ash Tree Farm (CA5/3) and Oakhanger Hall (CA5/5). See map CT-06-237-L1, G1 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.10.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.11 Additional land for two utility compounds at Newcastle Road and Chorlton Lane (AP2-005-011)

- 5.11.1 The Bill provides for the permanent diversion of a National Grid 600mm diameter high pressure gas pipeline by 425m, to pass under the HS2 route 75m south of Jubilee Farm. See Map CT-06-238, D5 to D7, in the main ES, Volume 2, CA5 Map Book. The works would be managed from the Crewe South cutting satellite compound. Chorlton Footpath 13 would be diverted to the east of the HS2 route and join Chorlton Footpath 9 to the north and Chorlton Lane to the south. Chorlton Footpath 12 would be closed to the east of the HS2 route where it crosses the route, and footpath users would be directed along the diverted Chorlton Footpath 13. See Map CT-06-238, F5 to B5 in the main ES Volume 2, CA5 Map Book.
- 5.11.2 Since submission of the Bill, a requirement has been identified for two new utility compounds to manage the diversion of the National Grid 600mm diameter high pressure gas pipeline.
- 5.11.3 The Newcastle Road utility compound will be located to the east of the HS2 route, between the West Coast Main Line (WCML) and Chorlton Lane, adjacent to Jubilee Farm. It will be located on land identified in the original scheme for the diversion of Chorlton Footpath 13. During operation of the Newcastle Road utility compound, Chorlton Footpath 13 will be diverted around the perimeter of the utility compound. See Map CT-05-238, D4 to C5 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.11.4 Chorlton Lane utility compound will be located to the west of the WCML and the HS2 route, north of Swill Brook and north-west of Dairy Farm. See Map CT-05-238, D6 to C8 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.11.5 Newcastle Road utility compound and Chorlton Lane utility compound will be operational for nine months, commencing in 2021, and each will support an average of 15 workers per day (20 workers at peak times).
- 5.11.6 Access to Newcastle Road utility compound will be from Chorlton Lane to Newcastle Road. See Map CT-05-238 D4 to A2 in the SES2 and AP2 ES Volume 2, CA5 Map Book. Access to Chorlton Lane utility compound will be via site haul routes to the A500 Shavington Bypass. The land required for the new utility compounds to manage the National Grid 600mm diameter high pressure gas pipeline diversion is outside the limits of the Bill, and will result in the requirement for an additional 3.2ha of land,

some of which will be from the following agricultural land holdings: Heath Farm (CA5/13) and Jubilee Farm (CA5/12). See Map CT-05-238, E4 to A6 and CT-05-239, J6 to H6, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction Topics to be included in the AP2 assessment

Topics included in the AP2 assessment

- 5.11.7 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: ecology and biodiversity; and traffic and transport.
- 5.11.8 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Ecology and biodiversity

Scope, assumptions and limitations

- 5.11.9 The assessment scope, key assumptions and limitations for ecology and biodiversity are as set out in Volume 1, the Scope and Methodology Report⁷¹ (SMR) and SMR Addendum⁷² of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.11.10 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for ecology and biodiversity.
- 5.11.11 Where data are limited, a precautionary baseline has been built up according to the guidance provided in the SMR and SMR Addendum. This constitutes a 'reasonable worst case' basis for the subsequent assessment.
- 5.11.12 The precautionary approach to the assessment that has been adopted identifies the likely significant environmental effects of the amendment.

Existing environmental baseline

- 5.11.13 The ecological baseline of the area subject to the amendment has been based on field data collated for the main ES and SES1, aerial photography, and relevant information from regional and local sources. In addition, the baseline has been informed by additional Phase 1 habitat survey.
- 5.11.14 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in Background Information and Data (BID) document BID-EC-019-000, including Map Series EC-02, which accompanies the SES2 and AP2 ES.

⁷¹HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁷²HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.11.15 A summary of the baseline information relevant to the assessment of the amendment is provided below. Further detail on the relevant new or updated baseline information is provided in BID-EC-019-000, including Map Series EC-02 which accompanies the SES2 and AP2 ES.
- 5.11.16 For those receptors described in the main ES, further details are provided in Volume 2, CA5, Section 8 and Volume 5: Appendix EC-001-000, including Map Series EC-01. Baseline ecology reports that accompanied the main ES are provided in BID-EC-002-000 to BID-EC-014-000, including Map Series EC-02 to EC-12⁷³.
- 5.11.17 For those receptors described in SES1, further details are provided in Volume 2, CA5, Section 3. The baseline ecology report that accompanied SES1 and AP1 ES is provided in BID EC-004-000, including Map Series EC-02, EC-04, EC-05, EC-10, EC-11 and EC-12⁷⁴.

Designated sites

- 5.11.18 There are no designated sites of relevance to the assessment of the amendment.

Habitats

- 5.11.19 Habitats within the area subject to the amendment include broadleaved woodland, broadleaved woodland plantation, semi-improved grassland, semi-improved neutral grassland, amenity grassland, improved grassland, arable, hedgerow and water bodies.
- 5.11.20 Small areas of semi-natural woodland are present within the area subject to the amendment. These are up to local/parish value.
- 5.11.21 Semi-improved neutral grassland is located to the east of WCML, between Chorlton Lane and the WCML, south of Jubilee Farm. This grassland is likely to qualify as lowland meadow, a habitat of principal importance in Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006)⁷⁵, and a conservation priority of the Cheshire Biodiversity Action Plan⁷⁶ (BAP). The grassland is located partially within the area subject to the amendment. The grassland is of district/borough value.
- 5.11.22 Areas of species-poor, semi-improved grassland are present within the area subject to the amendment, north of Jubilee Farm and west of Chorlton Lane. These are of local/parish value.
- 5.11.23 Hedgerows within the area subject to the amendment are predominantly species-poor. Hedgerow with at least 80% cover of native woody species is a habitat of principal importance and a conservation priority of the Cheshire BAP. These contribute towards a wider hedgerow network within the South Cheshire area that is of district/borough value.

⁷³HS2 Ltd (2017). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Available online at: <https://www.gov.uk/government/publications/hs2-phase-2a-background-information-and-data-ecology-and-biodiversity>

⁷⁴HS2 Ltd (2018). *High Speed Two (HS2) Phase 2a (West Midlands - Crewe), Background Information and Data*, Supplementary ecological baseline data (BID EC-004-000), Available online at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692664/G33_Ecological_baseline_BID-EC-004-000_WEB.pdf

⁷⁵Natural Environment and Rural Communities Act 2006 (2006 CHAPTER 16). Her Majesty's Stationery Office, London.

⁷⁶Cheshire Wildlife Trust, (2007), *Biodiversity Action Plans for Priority Species and Habitats in Cheshire*. Available online at: <https://www.cheshirewildlifetrust.org.uk/sites/default/files/2018-06/BAP%20list%20-%20updated%20April%202011.pdf>

Species

- 5.11.24 Protected and/or notable species that are known or assumed to occur within the area subject to the amendment include great crested newt, common amphibian species, common reptile species, bats, badger, polecat, harvest mouse, European hedgehog, and brown hare.
- 5.11.25 The main ES, as amended by SES1, reported a great crested newt metapopulation⁷⁷ situated to the west and south-west of Hough to Chorlton (AMP⁷⁸5.3). Field surveys determined the presence of great crested newt in eight ponds of 19 surveyed, within a network of 22 ponds assumed to be used by this metapopulation. Two ponds within the metapopulation are within the area subject to the amendment. Terrestrial habitats likely to be used by this metapopulation occur within the area subject to the amendment, in the form of hedgerows, grassland and woodland. Great crested newt is an Annex 2 species⁷⁹, a species of principal importance, and a conservation priority of the Cheshire BAP. The great crested newt population west and south-west of Hough to Chorlton is of county value.
- 5.11.26 The main ES reported populations of common reptile species such as grass snake and slow-worm, identified through desk study records, as being potentially present in low numbers throughout the South Cheshire area. Field survey, in an area immediately to the north of the amendment, on the adjacent Wychwood Park Golf Club, recorded a population of grass snake. Grass snake and slow-worm are both species of principal importance. Grass snake is also a conservation priority of the Cheshire BAP. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of up to county value.
- 5.11.27 The main ES reported populations of amphibian species including palmate newt, smooth newt, common toad and common frog, identified through field surveys, within ponds throughout the South Cheshire area. Amphibian species are assumed to be present in ponds that have not yet been surveyed. The area subject to the amendment includes ponds, grassland, hedgerow and woodland habitats that are likely to be used by these species. Common toad is a species of principal importance. The populations of common amphibians throughout South Cheshire are of local/parish value.
- 5.11.28 The main ES reported a bat assemblage associated with habitats near Chorlton. Field surveys in this area recorded one summer roost for a Pipistrelle species in a tree and a feeding perch for a brown long-eared bat. Low to moderate foraging and commuting activity was recorded by an assemblage including common pipistrelle, soprano pipistrelle, and Pipistrelle species and low levels of activity for brown long-eared bats. The area subject to the amendment contains potential bat roosting, foraging and commuting habitats that are likely to be used by this bat assemblage. The bat assemblage includes several species of principal importance and species that

⁷⁷ A metapopulation is a group of spatially separated populations which interact. Metapopulations are described in BID-EC-007-000, Ecological baseline data – amphibian and pond surveys.

⁷⁸ The first and second number associated with the AMP reference relate to the specific CA and location e.g. AMP2.1 is within the Colwich to Yarlet area and is the first metapopulation encountered on the Phase 2a scheme when following the route from the London end.

⁷⁹ Annex 2 of the EU's Habitats Directive (1992) lists priority species whose conservation requires the designation of Special Areas of Conservation (SAC).

are conservation priorities of the Cheshire BAP. The bat assemblage associated with habitats near Chorlton is of local/parish value.

- 5.11.29 The main ES, as amended by SES1, reported at least five social groups of badger throughout the South Cheshire area, identified through field surveys. The area subject to the amendment includes suitable sett building and foraging habitats for badger. The badger populations throughout the South Cheshire area are of local/parish value.
- 5.11.30 The main ES reported populations of other mammals including polecat, harvest mouse, European hedgehog, and brown hare, identified through desk study records, as being potentially present throughout the South Cheshire area. The area subject to the amendment includes suitable habitats for these species. If present, these populations are of local/parish value.

Future environmental baseline

Construction (2020)

- 5.11.31 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.11.32 The assessment assumes implementation of the measures set out within the draft Code of Construction Practice (CoCP)⁸⁰.
- 5.11.33 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.11.34 All of the effects within this section are reported in the absence of other mitigation.

Habitats

- 5.11.35 The main ES, as amended by SES2, reported the loss of 3.6ha of lowland meadow, a habitat of principal importance, to the west of Chorlton Lane and to the south of Jubilee Farm, which would result in a permanent adverse effect that is significant at a district/borough level. The amendment will result in an additional loss of 0.2ha of lowland meadow. This will give rise to a different significant effect on lowland meadow. However, the amendment will not change the level of significance of the effect as reported in the main ES, as amended by SES2.
- 5.11.36 On a precautionary basis, the main ES, as amended by SES1, reported a loss of 21.9km of hedgerow habitat within the land required for construction of the original scheme within the South Cheshire area, which would result in a permanent adverse effect that is significant at the district/borough level. The amendment will not result in the loss of

⁸⁰ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

additional hedgerow and will not give rise to a new or different significant effect on the hedgerow network within the South Cheshire area.

Species

- 5.11.37 The main ES, as amended by SES1, reported the loss of four ponds and associated terrestrial habitat that are known or assumed to be used by the great crested newt metapopulation situated west and south-west of Hough to Chorlton (AMP 5.3), which would result in a permanent adverse effect that is significant at up to county level. The amendment will not result in the loss of ponds or terrestrial habitat associated with this metapopulation. The amendment will not give rise to any new or different significant effects on the great crested newt metapopulation west and south-west of Hough to Chorlton. The amendment will therefore not change the level of significance of the effect as reported in the main ES, as amended by SES1.
- 5.11.38 It is not likely that any other effects on species of relevance at more than the local/parish level will occur as a result of the amendment. Additional local/parish level effects arising from the AP2 revised scheme are listed in SES2 and AP2 ES Volume 5: Appendix EC-016-000.

Mitigation and residual effects

Other mitigation measures

- 5.11.39 The main ES reported the creation of 4ha of grassland habitat to the west of Waybutt Lane to compensate for the loss of 3.6ha of lowland meadow to the west of Chorlton Lane and to the south of Jubilee Farm. Once established, these habitats will also compensate for the additional 0.2ha of lowland meadow lost to the amendment. These measures will reduce the different adverse effect resulting from this amendment on lowland meadow to the west of Chorlton Lane and to the south of Jubilee Farm to a level that is not significant.

Summary of likely residual significant effects

- 5.11.40 With the implementation of the mitigation proposed, the ecological effects arising from the amendment are reduced to a level where they are not significant. The significant effects of the amendment in this area are therefore unchanged from those reported in the main ES and SES1.

Cumulative effects

- 5.11.41 There are no new or different likely significant cumulative effects for ecology and biodiversity as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.11.42 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.11.43 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users. The assessment of the changes to construction traffic flows

as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.11.44 The baseline traffic and transport information for the South Cheshire area is as described in Volume 2, CA5, Section 14 of the main ES.
- 5.11.45 Chorlton Lane is a local road in the South Cheshire area. Chorlton Lane connects Chorlton with the A531 Newcastle Road and to onward destinations including the built-up areas of Crewe. There are a number of PRow which cross the area including Chorlton Footpath 12 which runs alongside the WCML and connects Chorlton Lane to Chorlton Footpath 7 and Chorlton Footpath 13 which connects Chorlton Lane to Chorlton Footpath 12 across the WCML. The surveys undertaken to inform the assessment showed Chorlton Footpath 12 and Chorlton Footpath 7 had the highest usage with 14 users a day recorded.

Future environmental baseline

Construction (2023)

- 5.11.46 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.11.47 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.11.48 The main ES showed that the utility works cross Chorlton Footpath 12. The main ES also reported that Chorlton Footpath 12 would be permanently stopped-up with users diverted via the Chorlton Footpath 13 diversion. This would not result in an adverse effect as there would be no change in travel distance via alternative routes.
- 5.11.49 This amendment changes the alignment of the utility works but does not result in any change to the stopping up of Chorlton Footpath 12 or the diversion of Chorlton Footpath 13 and no change to the assessment of users of Chorlton Footpath 12.
- 5.11.50 This amendment will therefore not give rise to any new or different likely residual significant effects on the users of Chorlton Footpath 12 and will not change the level of significance of the effects reported in the main ES. For further information see SES2 and AP2 ES Volume 5: Appendix TR-001-000 and BID-TR-001-000 that accompanies the SES2 and AP2 ES.

Cumulative effects

- 5.11.51 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

5.12 Additional land required for access to Heath Farm (AP2-005-012)

- 5.12.1 The Bill provides for access to Heath Farm by means of an existing track which connects to a section of retained Newcastle Road to the north of the farm. See Map CT-06-239, I7 to H7, in the main ES Volume 2, CA5 Map Book.
- 5.12.2 Since submission of the Bill, further engagement with the land owner has identified a requirement to provide a new permanent access to Heath Farm. The new access road to Heath Farm, approximately 55m in length and 3.5m wide with a 1.5m verge to each side, will be provided off the diverted Chorlton Lane, approximately 50m to the east of Heath Farm. See Map CT-06-239, I6 to I7 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 5.12.3 The amendment will be constructed over a period of one month, commencing in 2021. Works will be managed from the Crewe South Portal satellite compound.
- 5.12.4 The land required for the provision of a new access road to Heath Farm will result in a requirement for an additional 770m² of land, some of which will be from Heath Farm (CA5/13). See Map CT-05-239, I6 to I7 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.12.5 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

5.13 Rail systems modifications and civil engineering works in and around Crewe Station; and removal of rail systems and civil engineering modifications to the Crewe to Cheadle Hulme Line (AP2-005-013)

- 5.13.1 The Bill provides for modifications to the existing conventional railway at Crewe Station. To accommodate HS2 rail services at Crewe Station, the existing Cardiff to Manchester Piccadilly services would be diverted via the Independent Railway Lines and stop at Crewe Station at a new island platform to the west of the existing Crewe Station. See Map CT-06-241a, E6 in the main ES Volume 2, CA5 Map Book. The key engineering works would include:
- a new island platform, 110m in length. See Map CT-06-241a, E6 in the main ES Volume 2, CA5 Map Book;
 - Crewe retaining wall 1, 140m in length and up to 2m in height, located 230m south-east of the new island platform. See Map CT-06-241a, H7 to G7 in the main ES Volume 2, CA5 Map Book;
 - Crewe retaining wall 2, 220m in length and up to 4m in height, located north of the new island platform. See Map CT-06-241a, F6 to E6 in the main ES Volume 2, CA5 Map Book;

- lowering of two sections of existing tracks, adjacent to Crewe retaining walls 1 and 2, for conventional rail services (on the Independent Railway Lines), by up to 1.4m below existing track level to accommodate the new platform. See Map CT-06-241a, H7 to E6 in the main ES Volume 2, CA5 Map Book;
- a new Crewe Station multi-level footbridge, 74m in length and with a minimum clearance of 6.2m above Independent Lines track level (of the existing tracks between the road access to the diesel depot and the back of existing platform 12), to provide public access via stairs and lifts to the new island platform. The new footbridge would provide access from the west of the existing disused platform 12, within the station, to the new island platform. See Map CT-06-241a, F6 in the main ES Volume 2, CA5 Map Book;
- a footbridge to provide a secondary means of escape from the new island platform for emergency evacuation, 37m in length and with a minimum clearance of 6.2m above track level, located at the north end of the new island platform. See Map CT-06-241a, E7 to E6 in the main ES Volume 2, CA5 Map Book; and
- modifications to the existing tracks, signalling, overhead lines, cable routes and other rail systems; and
- railway systems upgrades would be necessary in the Independent Lines tunnel, including passive fire protection, overhead contact system modifications, and emergency signage/lighting and barriers at cross passages to the adjacent tunnel.

5.13.2 As a result of the operation of HS2 services at Crewe and West Coast Main Line (WCML), modifications would also be required to the Crewe to Cheadle Hulme Line (part of the WCML) infrastructure at Maw Green and Sandbach. These modifications would improve capacity, whilst maintaining operational flexibility on the existing railway, to accommodate the HS2 services. Works would include:

- the installation of new at-grade track switches and crossings at Maw Green;
- reconfiguration of the track layout and crossings in and around Sandbach Station;
- raising of an existing footbridge close to Sandbach Station; and
- modifications to the existing rail systems including new or relocated signalling, overhead line equipment and other rail assets at Maw Green and Sandbach.

5.13.3 Construction of the new island platform and supporting infrastructure would be managed from the Motorail Terminal main compound. The Alexandra Stadium satellite compound would be used to support the railway system works at Crewe Station. See Map CT-06-241a, G6 to E6 and F7 in the main ES Volume 2, CA5 Map Book.

5.13.4 The construction works were expected to require a number of rail possessions including 64 possessions of either 27 or 54 hours, two possessions up to 100 hours, and two blockades in the South Cheshire area and a limited number of weekend track possessions required around Sandbach Station with a further long track possession

(predicted to be nine days) required to complete the removal and installation of the crossings and signals. Disruption to rail users will be reduced by limiting possessions, where reasonably practicable, to existing maintenance periods. The two blockades would affect users of the WCML and will be managed through a combination of some diversions and replacement bus services which will reduce the disruption to the travelling public.

5.13.5

Since submission of the Bill, further design development has identified a revised track configuration west of the existing Crewe Station to accommodate both the Cardiff to Manchester and the Crewe to Manchester Piccadilly (via Stockport) conventional services. The purpose of these track changes will be to reduce disruption to the existing services, reduce the extent of modifications on the existing conventional railway to the north of Crewe, allowing services to be regulated and capacity released at Crewe Station, as HS2 services enter in to operation. The changes include:

- a new single-sided platform, approximately 160m in length, will replace the island platform proposed in the original scheme and release capacity for conventional railway services through the existing Crewe Station. See Map CT-06-241a, F6 to E6 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the removal of the existing Chester Independent Railway Lines at Crewe to accommodate the new single-sided platform. See Map CT-06-241a, G6 to D6 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the lowering of two sections of existing tracks for conventional rail services (on northbound and southbound Independent Railway Lines) up to 1m below existing track level. See Map CT-06-241a, H6 to D6 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- an increase in the length of the Crewe retaining wall 1 from 140m provided for in the original scheme to 335m in length, located approximately 100m south of the new platform. There will be no change to the height of the retaining wall (up to 2m). See Map CT-06-241a, H7 to E7 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the Crewe retaining wall 2, provided in the original scheme, will not be required;
- a reduction in the length of the new Crewe Station footbridge from 74m provided for in the original scheme to approximately 58m, with a minimum clearance of 7.35m above existing track level (the existing tracks between the road access to the diesel depot and the back of existing platform 12). See Map CT-06-241a, F6 to E6 in the SES2 and AP2 ES Volume 2, CA5 Map Book;
- the footbridge, provided for in the original scheme as a secondary means of escape for emergency evacuation, will be replaced by a new walkway, approximately 125m in length, which will run parallel to the rear of the new platform. This will connect with the platform ramp. The new walkway and stairs will also provide access for maintenance and operation. See Map CT-06-241a, F6 to E6 in the SES2 and AP2 ES Volume 2, CA5 Map Book;

- a new crossover will be provided between the existing Independent Railway Lines, north of the existing Independent Lines tunnel. See Map CT-06-242, C6 to H6 in the SES2 and AP2 ES Volume 4, CA5 Map Book;
- modifications to the existing tracks, signalling, overhead lines, cable routes and other new or existing rail systems assets; and
- as part of the works at Crewe Station, railway systems upgrades will be necessary in the Independent Lines tunnel, including passive fire protection, overhead contact system modifications, and emergency signage/lighting and barriers at cross passages to the adjacent tunnel.

5.13.6 This amendment will involve piling works to install a new retaining wall. The piling works will need to be undertaken during rail possession periods. It is anticipated that the rail possessions will take place for 52 hours on 48 weekends. Whilst it is envisaged that the piling works would be undertaken during the daytime period of the possessions, this is dependent upon the specific ground conditions encountered. There may be a requirement for the piling works to continue into the night time period of the possessions.

5.13.7 The amendment will also remove a number of possessions previously proposed for the works in and around Crewe and at Sandbach. In overall terms, the amendments do not change the findings of the main ES in relation to rail possessions.

5.13.8 As a result of the revised platform design and track configuration, the modifications to the Crewe to Cheadle Hulme Line infrastructure at Maw Green and Sandbach will no longer be required. See Map CT-06-242 and CT-06-245 in the SES2 and AP2 ES Volume 4, CA5 Map Book.

The Alexandra Stadium satellite compound, provided for in the original scheme, will not be required. All construction activities associated with the infrastructure and railway system modifications, in and around Crewe Station, will be managed from the Motorail Terminal main compound. This compound will be operational for four years and nine months, commencing in 2021. This compound will support an average of 57 railway systems workers per day (100 workers at peak times). Three railway systems compounds, reported in the off-route effects in the main ES, Volume 4, will support the construction and installation of the railway systems infrastructure, these are:

- Tommy's Lane Road Rail Access Point (RRAP) satellite compound: this will be located between the A532 and the Crewe to Manchester lines with access off Tommy Lane. See Map CT-05-241a B4 to A2 in the SES2 and AP2 ES Volume 2, CA5 Map Book. This compound will be operational for four years and nine months, commencing in 2021, and the compound will support an average of 50 railway systems workers per day (100 workers at peak times).;
- Crewe Retail Park – Aldi satellite compound: this will be located between Crewe Retail Park and Crewe to Manchester railway. See Map CT-05-241a, B3 to A3 in the SES2 and AP2 ES Volume 2, CA5 Map Book. This compound will be operational for two years and three months, commencing in 2021 and will support an average of 11 railway systems workers per day (50 workers at peak times); and

- Rookery Bridge Road Rail Access Point (RRAP) satellite compound: this will be located between the Trent and Mersey Canal and Hall Lane. See Map CT-05-244 D6 to C6 in the SES2 and AP2 ES Volume 4, Off-route Map Book. This compound will be operational for two years and three months, commencing in 2021, and will support eight railway systems workers per day.

5.13.9 The land required for railway systems modifications works to accommodate the amended track configuration to the west of the existing Crewe Station for the single-sided platform are outside of the limits of the Bill, and will result in a requirement for an additional 1.3ha of land, none of which is assumed to be from agricultural land holdings. See Maps CT-06-241a, B9 to A1 in the SES2 and AP2 ES Volume 2, CA5 Map Book.

Topics included in the AP2 assessment

- 5.13.10 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for the following topics: cultural heritage; sound, noise and vibration; and traffic and transport.
- 5.13.11 The assessment of the changes to construction traffic flows and traffic related effects as a result of this AP2 amendment in combination with all SES2 changes and AP2 amendments, are reported in Section 7.

Cultural heritage

Scope, assumptions and limitations

- 5.13.12 The assessment scope, key assumptions and limitations for cultural heritage are as set out in Volume 1, the Scope and Methodology Report (SMR)⁸¹ and SMR Addendum⁸² of the main ES and SMR Addendum 2 (see SES2 and AP2 ES Volume 5: Appendix CT-001-000).
- 5.13.13 The amendment has the potential to result in new or different temporary or permanent significant construction effects only. Therefore, there is no operational assessment for cultural heritage.

Existing environmental baseline

- 5.13.14 The baseline cultural heritage information for the South Cheshire area is as described in Volume 2, CA5, Section 7 of the main ES.
- 5.13.15 Grade II 19th century railway station platform buildings at Crewe constructed in 1867 (SCH052), are designated assets of moderate value and lie wholly within the land required for the amendment.

⁸¹ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁸² HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at: <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

- 5.13.16 Further information about this asset is provided in the main ES Volume 5: Appendix CH-002-003 and Map Series CH-01 and CH-02 in the main ES Volume 5: Cultural heritage Map Book.

Future environmental baseline

Construction (2020)

- 5.13.17 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.18 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁸³ are identified.

Assessment of impacts and effects

- 5.13.19 The amendment will not give rise to a new or different significant effect as it will not physically impact the Grade II railway station platform buildings at Crewe, nor will it affect their significance due to a change in their setting. This will not change the level of significance of the effects reported in the main ES.

Cumulative effects

- 5.13.20 There are no new or different likely significant cumulative effects for cultural heritage as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Sound, noise and vibration

Scope, assumptions and limitations

- 5.13.21 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.
- 5.13.22 This amendment has the potential to result in new or different significant construction effects only. Therefore, there is no operational assessment for sound, noise and vibration.

Existing environmental baseline

- 5.13.23 The baseline sound and vibration information for the South Cheshire area is as described in Volume 2, CA5, Section 13 of the main ES. Baseline sound levels representative of the assessment locations affected by this amendment have been used in the construction assessment.

⁸³ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

- 5.13.24 This amendment involves works close to residential properties which were not included within the main ES. The additional baseline sound levels are presented in SES2 and AP2 ES Volume 5: Appendix SV-001-000.
- 5.13.25 The area close to the amendment includes residential properties on Ivatt Drive, Worsdell Close and Goode Way. The existing baseline in this area is dominated by rail traffic noise from the WCML and the local sidings, and road traffic noise from B5071 Gresty Road.

Future environmental baseline

Construction (2020)

- 5.13.26 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.27 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.13.28 The main ES did not identify any likely significant effects on a community basis in proximity to this amendment.
- 5.13.29 The amendment involves piling works to install a new retaining wall. Given the proximity to the existing operational railway, it is likely that for safety reasons, these works will need to be undertaken during rail possession periods. Usually rail possessions are limited in duration and hence are not included within the assessment. However for the purposes of the assessment of this amendment it is currently estimated that weekend rail possessions will be required for approximately 11 months. Whilst it is envisaged that the piling works would be undertaken during the daytime period of the possessions, this is dependent upon the specific ground conditions encountered, and therefore may require the piling works to continue into the night time period of the possessions.
- 5.13.30 On a precautionary basis, the assessment has assumed that the works are required to be undertaken during the night-time across the entire construction period for this amendment. The piling works will give rise to a new likely significant effect from construction noise on a community basis at approximately 70 residential properties in Crewe, on Ivatt Drive, Goode Way, Gresty Road and Worsdell Close, during the weekend rail possessions for a period up to seven months, as the properties will be screened by an existing building during part of the works. This is denoted as CSVo5-Co7, in SES2 and AP2 ES Volume 5: Appendix SV-002-000.

Mitigation and residual effects

Other mitigation measures

- 5.13.31 No mitigation measures additional to those reported in the main ES and draft CoCP are identified.

Summary of likely residual significant effects

- 5.13.32 The amendment will give rise to a new likely residual significant construction noise effect on a community basis at approximately 70 properties in Crewe, on Ivatt Drive, Goode Way and Worsdell Close for a period of seven months.

Cumulative effects

- 5.13.33 There are no new or different likely significant cumulative effects for sound, noise and vibration as a result of the amendment acting in combination with any other AP2 amendments or AP1 amendments.

Traffic and transport

Scope, assumptions and limitations

- 5.13.34 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the SMR and SMR Addendum of the main ES.
- 5.13.35 This amendment has the potential to result in new or different construction effects only. Therefore, there is no operational assessment for traffic and transport.
- 5.13.36 The assessment in this section considers the potential effects on public rights of way (PRoW) or footway users and car parking. The assessment of the changes to construction traffic flows as a result of this amendment in combination with all SES2 changes and AP2 amendments is reported in Section 7.

Existing environmental baseline

- 5.13.37 The baseline traffic and transport information for the area where this amendment is located is as described in Volume 4, Section 4 of the main ES.
- 5.13.38 Sandbach Station is located to the west of Sandbach, at Elworth. Sandbach Station is accessed from the B5079 Station Road and the A533 London Road which is a local road providing access to the surrounding residential areas. To the south of the station is a footbridge, overbridge No. 18 (Sandbach footpath 51), which connects the residential area on the east and west across the existing railway line.

Future environmental baseline

Construction (2023)

- 5.13.39 The future baseline for construction in 2023 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 5.13.40 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 5.13.41 The main ES reported that although Sandbach Station satellite compound would be located within the Sandbach Station car park, disruption to users would be minimised

as the compound will be used at night only during the week and during weekend rail possessions, when no train services are running. The main ES reported that that as a consequence of the modifications to the WCML at Sandbach, there would be a need to raise the existing foot overbridge No. 18 by approximately 1m. These works would require the overbridge to be closed for a period of approximately three months. A temporary diversion would require non-motorised users to cross the WCML via the A533 London Road bridge, the length of diversion being approximately 220m. The main ES reported a temporary minor adverse significant effect on non-motorised users as a result of severance from increased travel distance.

- 5.13.42 The amendment will remove Sandbach Station satellite compound and any associated disruption to users of the rail station car park. The amendment will remove the need for the modifications to the WCML at Sandbach and therefore remove the need to raise the existing foot overbridge No. 18. The amendment will remove the minor adverse severance effect on non-motorised users reported in the main ES.

Mitigation and residual effects

Other mitigation measures

- 5.13.43 No mitigation measures additional to those reported in the main ES and CoCP are required.

Summary of likely residual significant effects

- 5.13.44 The amendment will remove the likely residual minor adverse severance significant effect on non-motorised users reported in the main ES, as there will no longer be a need to raise the existing foot overbridge No. 18.

Cumulative effects

- 5.13.45 There are no new or different likely significant cumulative effects for traffic and transport as a result of the amendment acting in combination with any other AP2 amendments, AP1 amendments or any relevant committed development.

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

- 5.13.46 The amendment will give rise, on a precautionary basis, to a new likely residual significant construction noise effect on a community basis at approximately 70 properties in Crewe, on Ivatt Drive, Goode Way and Worsdell Close for a period of seven months.
- 5.13.47 The amendment will remove the likely residual minor adverse severance significant effect on non-motorised users of foot overbridge No. 18 at Sandbach. The removal of the need for the modifications to the WCML will mean there is no longer a need to raise the existing foot overbridge No. 18 and therefore the users of the footbridge will not be affected.

6 Assessment of minor utility amendments in the South Cheshire area

6.1 Additional land for a new diversion of a United Utilities water mains supply north of Heath Farm (AP2-005-101)

- 6.1.1 The AP1 revised scheme (AP1-005-120: Additional land for new temporary Scottish Power 11kV power supply to Crewe South portal satellite compound and a new permanent Scottish Power 11kV power supply to balancing pond pump station), provides for additional land which overlaps with the land required for this amendment.
- 6.1.2 Since submission of the SES1 and AP1 ES, further engagement with the utility provider has identified a need for additional land to permanently divert an existing United Utilities water mains supply. The diversion will be 1.2km in length, running from a point 200m west of Chorlton Lane, crossing under the HS2 route and the West Coast Main Line (WCML) 420m south of Newcastle Road overbridge, before continuing west and north-west to the north of Heath Farm, Newcastle Road and Casey Lane and re-connecting to the existing utility 20m east of Back Lane.
- 6.1.3 This amendment is dependent on AP1-005-120 (Additional land for new temporary Scottish Power 11kV power supply to Crewe South portal satellite compound and a new permanent Scottish Power 11kV power supply to balancing pond pump station) being enacted, as part of the additional land included within the AP1 amendment (AP1-005-120) is required for the utility works described in the AP2 amendment. See Map CT-05-239, H7 to G9 and G10 to F8, Map CT-05-239-L1, G2 to F1, Map CT-06-239, H7 to G9 and G10 to F8, and Map CT-06-239-L1, G2 to F1, in the SES1 and AP1 ES Volume 2, CA5 Map Book.
- 6.1.4 The activities will require the removal of any surface material from the area of the diversion route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to divert the utility are currently planned to be carried out in the period 2021-2022 and are expected to take approximately six months to complete.
- 6.1.5 The land required for the new diversion of a United Utilities water mains supply is outside of the limits of the bill and will result in a requirement for an additional 3ha of land, some of which will be from the following agricultural land holdings: Heath Farm (CA5/13), Oakhanger Hall (CA5/5), Chorlton Bank Farm (CA5/15) and land west of Chorlton Lane (CA5/14). See Map CT-05-239, I5 to I4 and I7 to F10, and Map CT-05-239-L1, H1 to F2, in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land will be returned to its existing use following construction.
- 6.1.6 This amendment is considered to require reassessment of the environmental effects and mitigation in the main ES, as amended by SES1 and SES2, for ecology and biodiversity.

Ecology and biodiversity

- 6.1.7 The main ES reported the presence of a population of alder leaf beetle, a Red Data Book species, within woodland adjacent to Wychwood Park Golf Club. The main ES reported the loss of approximately 300m² of broadleaved woodland to construction of the original scheme, which would result in an adverse effect on the Alder leaf beetle at the local/parish level, which is not significant.
- 6.1.8 The amendment will result in the loss of an additional 280m² of broadleaved woodland in this location. On a precautionary basis, in the absence of detailed information on the distribution of alder leaf beetle, the loss of a total of 580m² of broadleaved woodland adjacent to Wychwood Golf Club is assumed to represent a new permanent adverse effect on the population of alder leaf beetle that is significant at the district/borough level.
- 6.1.9 Woodland habitat creation measures, including provision along the A531 Newcastle Road and west of Chorlton Lane, within the original scheme will compensate for the loss of woodland used by the alder leaf beetle. This will reduce the level of effect such that it is not significant.

6.2 Additional land for new underground Openreach telecommunications cable to Crewe South Crossovers railway systems satellite compound (AP2-005-102)

- 6.2.1 Since submission of the Bill, further engagement with the utility provider has identified a need for additional land to provide a new temporary underground Openreach telecommunications cable to Crewe South Crossovers railway systems compound. The new temporary telecommunications cable will be 1.1km in length, running from an existing telecommunications cable on Savoy Road, for 540m along David Whitby Way to an existing roundabout and continuing west to the Crewe South Crossovers railway systems satellite compound. See Map CT-05-240-R1, F8 to D3 in the SES2 and AP2 ES Volume 2, CA5 Map Book.
- 6.2.2 The activities will require the removal of any surface material from the area of the connection route (this may include vegetation, soil, and road surfacing), the removal of existing utility infrastructure (where necessary) and installation of the utility. As required and where suitable, topsoil will be temporarily stored adjacent to the working area and will be used to reinstate the area once the works are complete. Activities to construct the utility are currently planned to be carried out in 2021-2022 and are expected to take approximately six months to complete.
- 6.2.3 The land required for this underground Openreach telecommunications cable is outside the limits of the Bill, and will result in a requirement for an additional 0.8ha of land, the majority of which is assumed to be within the existing highway boundary. See Map CT-05-240-R1, G4 to D3 in the SES2 and AP2 ES Volume 2, CA5 Map Book. It is assumed that all of the additional land required will be returned to its existing use following construction.
- 6.2.4 This amendment is not considered to require a reassessment of the environmental effects or mitigation as set out in the main ES, as amended by SES1 and SES2, with respect to any environmental topics.

7 Combined effects of changes and amendments in the South Cheshire community area due to changes in construction traffic flows

7.1 Introduction

7.1.1 This section reports the combined assessment of new or different significant construction traffic effects, as a result of changes in construction traffic flows. These relate to changes associated with SES2 changes and AP2 amendments, where the change in traffic flows cannot be directly attributed to an SES2 change or an AP2 amendment.

7.1.2 The assessment has also considered any impacts in the South Cheshire area associated with the SES2 changes and AP2 amendments in the adjoining community areas.

7.1.3 Traffic and transport effects are reported first, since the effects arise from changes in construction traffic flows. Other topics where a significant effect has been identified, are then reported in the following sequence:

- air quality;
- sound, noise and vibration;
- community; and
- socio-economics.

7.2 SES2 changes and AP2 amendments of relevance to this assessment

7.2.1 The assessment includes all changes to construction traffic. The primary contributors to construction traffic are the changes to the movement of excavated material, construction programme and construction assumptions. The assessment takes into account measures to reduce the need to move material by the road network and use of site haul routes to limit construction traffic on the road network.

7.2.2 Of the design changes and amendments, the following make a particular contribution to the assessment of changes in traffic flows in the South Cheshire area:

- Additional land required temporarily for a construction traffic route at the A500 Shavington Bypass (AP2-005-001);
- Additional land for the permanent diversion of a National Grid 1,050mm diameter high pressure gas pipeline at Den Lane (AP2-005-004);
- Local placement of surplus excavated material to the south-west of Blakenhall cutting (SES2-005-003), to the north and south of Chorlton Footpath 3 (SES2-005-005) and to the east of the Casey Lane diversion (SES2-005-006); and

- compounds to support utilities works.

7.2.3 Other SES2 design changes and AP2 amendments of relevance include those relating to utilities works.

7.3 Traffic and transport

Scope, assumptions and limitations

7.3.1 The assessment scope, key assumptions and limitations for traffic and transport are as set out in Volume 1, the Scope and Methodology Report⁸⁴ (SMR) and SMR Addendum⁸⁵ of the main ES.

Environmental baseline

Existing baseline

7.3.2 The baseline traffic and transport information for the South Cheshire area is as described in Volume 2, CA5, Section 14 of the main ES.

7.3.3 Since the production of SES1, additional information on traffic flows on one road in the South Cheshire area have been collected. In addition, a non-motorised user survey of one footpath in the area has been undertaken. This is set out in BID: TR-001-000 which accompanies the SES2 and AP2 ES.

7.3.4 The M6 is the only strategic road that runs through the South Cheshire area. The M6 runs along a north to south alignment to the east of Crewe. The main access to the motorway network in this area is at junction 16 of the M6.

7.3.5 There are five primary 'A' roads in the South Cheshire area, these are: the A500 Newcastle Road/Shavington Bypass, which provides an east to west connection through the area and links Nantwich to the south of Crewe and the M6 at Junction 16; the A532 Weston Road, which passes through Crewe Town Centre; the A5020 David Whitby Way/University Way, which passes around the eastern boundary of Crewe; the A534 Crewe Road/Nantwich Road, which connects Crewe with Nantwich and Sandbach; and the A531 Newcastle Road, which connects Crewe with the settlements of Chorlton, Betley, Wrinehill and Madeley Heath. The strategic and primary road network, particularly around Crewe, can get busy at peak times and delays can be experienced.

7.3.6 The main local roads that have relevance to the assessment are: the A5020 University Way/David Whitby Way, which traverses the eastern boundary of Crewe and connects the A534 Crewe Road/Nantwich Road with the A500 Newcastle Road/Shavington Bypass; the A51 Nantwich Bypass, which connects a number of primary 'A' roads to the west of Crewe; and the B5071 Jack Mills Way/Gresty Road, which connects the A500 Shavington Bypass with central parts of Crewe; and a section of Crewe Road, parallel to the B5071 Jack Mills Way, Checkley Lane, Den Lane, Chorlton Lane, Casey

⁸⁴ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report (Appendix CT-001-001). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

⁸⁵ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, Environmental Impact Assessment Scope and Methodology Report Addendum (Appendix CT-001-002). Available online at <https://www.gov.uk/government/publications/scope-and-methodology-report-for-hs2-phase-2a>

Lane; and Newcastle Road. The local road network in this area generally operates well although some localised delays can be experienced, particularly at peak times in the built-up area around Crewe.

- 7.3.7 There are pedestrian footways throughout Crewe town centre and adjacent to many of the roads in the smaller settlements of Shavington, Weston, Chorlton and Betley. Footways vary in width and condition within these areas. Where there is no formal footway provision adjacent to a road, non-motorised user numbers are generally low.
- 7.3.8 In the South Cheshire area, there is a network of advisory cycle routes connecting Crewe with some of the smaller surrounding settlements. There are cycle routes along: Macon Way; the A534 Crewe Road; the A534 Nantwich Road and Crewe Green Road (Route 451); Weston Lane (National Route 551, Newcastle to Nantwich and Winsford); and Casey Lane and Wrinehill Road (Regional Route 70).

Future baseline

Construction (2023)

- 7.3.9 The future baseline for construction in 2023 has been updated to include the additional information gathered in the baseline traffic surveys. The approach adopted in deriving the future baseline remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.3.10 No avoidance or mitigation measures additional to those reported in the main ES and draft Code of Construction Practice (CoCP)⁸⁶ are required.

Assessment of impacts and effects

Temporary effects

Construction compounds

- 7.3.11 Volume 2, Section 14 of the main ES provides details of construction compounds in the South Cheshire area. This information has been updated to reflect the provision of new compounds and changes to existing compounds resulting from the SES2 changes and AP2 amendments. This information is provided in Table 6.

⁸⁶ HS2 Ltd (2017). *High Speed Rail (West Midlands - Crewe) Environmental Statement*, Volume 5: Technical appendices, draft Code of Construction Practice (CT-003-000). Available online at <https://www.gov.uk/government/publications/draft-code-of-construction-practice-for-hs2-phase-2a>

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Table 6: Typical vehicle trip generation for construction sites in the South Cheshire area

Compound type	Location	Access to /from compound to main road network	Indicative start/set up date	Estimated duration of use (years) ⁸⁷	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ⁸⁸	
						Cars/ LGV	HGV
Main and satellite	Checkley Lane East main compound (including Checkley North embankment satellite compound)	Checkley Lane to A51 London Road for site set-up and servicing, followed by site haul route thereafter to the A500 Shavington Bypass	Civil engineering - October 2020	Four years and three months	10	32-44	32-48
			Site reinstatement – January 2026	Three months	2		40-41
			Rail systems – December 2024	Nine months	2	19-20	44-48
Satellite	Checkley Lane Utility Compound	Checkley Lane to A51 London Road for site set-up and servicing, followed by site haul route thereafter to the A500 Shavington Bypass	Sept 2021	One year	3	29-30	48-53
Satellite	Checkley Lane West satellite compound	Checkley Lane to A51 London Road for site set-up and servicing, followed by site haul route thereafter to the A500 Shavington Bypass	December 2024	One year and three months	2	15-19	44-48
Satellite	Den Lane Welfare satellite compound	Den Lane to site haul route, A500 Shavington Bypass	February 2025	Nine months	2	90-90	up to 10
Satellite	Den Lane East satellite compound	Den Lane to site haul route, A500 Shavington Bypass	January 2024	Two years and three months	7	6-6	up to 10
Satellite	Den Lane West satellite compound	Den Lane to site haul route, A500 Shavington	January 2024	One year and three months	4	60-96	up to 10

⁸⁷ The Volume 2 scheme description of the construction phase represents the duration of works in a different way to the Volume 5 Transport Assessment. The Volume 2 scheme description is based on quarters (each representing three months), e.g. December (Quarter 4) to February (Quarter 1) is rounded to six months, whereas the Volume 5 Transport Assessment counts the absolute duration and is then rounded e.g. three months

⁸⁸ For each compound the peak month of activity is the month within which HGV traffic is at its highest for that compound. The busy period is the period during which HGV traffic serving that compound will be greater than 50% of the HGV traffic in the peak month. The average daily combined two-way vehicle trips for the busy period is the lower end of the range shown in the table. Two-way trips refer to the total number of vehicle movements in both directions (i.e. with 200 westbound vehicles and 100 eastbound vehicles, there would be 300 two-way trips).

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Compound type	Location	Access to / from compound to main road network	Indicative start/set up date	Estimated duration of use (years) ⁸⁷	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ⁸⁸	
						Cars/ LGV	HGV
Utility	Den Lane utility compound A	Den Lane to Wrinehill Road, B5071 Bridge Street, B5071 Wybunbury Road, A51 London Road for site set-up, followed by site haul route to A500 Shavington Bypass	April 2021	One year and three months	1	30-30	23-23
Utility	Den Lane Utility Compound B	Den Lane to Wrinehill Road, B5071 Bridge Street, B5071 Wybunbury Road, A51 London Road for site set-up, followed by site haul route to A500 Shavington Bypass	May 2021	One year and six months	1	30-30	57-57
Satellite	Blakenhall Northbound spur embankment satellite compound	Wrinehill Road to B5071 Bridge Street, B5071 Wybunbury Road, A51 London Road for site set-up, followed by site haul route to A500 Shavington Bypass	Civil engineering – October 2020	Four years and six months	11	185-187	60-84
			Site reinstatement – January 2026	Six months	4		58-62
Satellite	Blakenhall cutting satellite compound	Chorlton Lane to Newcastle Road, A531 Newcastle Road for site set-up and servicing, followed by site haul route to Newcastle Road, A531 Newcastle Road	Civil engineering – October 2020	Three years	4	77-77	38-47
			Site reinstatement – January 2026	Three months	2		37-37
Satellite	Betley Crossovers satellite compound	Den Lane to site haul route, A500 Shavington	January 2024	Two years and three months	4	60-97	up to 10
Satellite	Delta Junction satellite compound	Den Lane to site haul route, A500 Shavington	January 2025	One year and three months	11	2-2	up to 10

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Compound type	Location	Access to / from compound to main road network	Indicative start/set up date	Estimated duration of use (years) ⁸⁷	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ⁸⁸	
						Cars/ LGV	HGV
Satellite	Crewe South cutting satellite compound	Wrinehill Road to B5071 Bridge Street, B5071 Wybunbury Road, A51 London for site set-up and servicing, followed by site haul route thereafter to the A500 Shavington Bypass	Civil engineering – October 2020	Four years and three months	3	186-187	313-322
			Site reinstatement – January 2026	Six months	2		
Satellite	South Crewe ATS Satellite compound	Site haul route to the A500 Shavington Bypass	August 2024	One year and three months	7	32-44	up to 10
Satellite	Waybutt Lane satellite compound	Site haul route to the A500 Shavington Bypass	January 2025	One year	7	33-44	up to 10
Satellite	Swill Brook satellite compound	Site haul route to the A500 Shavington Bypass	December 2025	Three months	3	up to 10	up to 10
Satellite	Chorlton TSL satellite compound	Chorlton Lane to Newcastle Road, A531 Newcastle Road	January 2025	One year	7	Up to 10	Up to 10
Satellite	Heath Farm satellite compound	Site haul route to the A500 Shavington Bypass	December 2024	Nine months	2	26-30	140-160
Utility	Chorlton Lane Utility Compound	Chorlton Lane to Newcastle Road, A531 Newcastle Road	March 2021	Nine months	6	6-6	up to 10
Utility	Newcastle Road Utility Compound	Site haul route to the A500 Shavington Bypass	March 2021	Nine months	1	24-24	66-66
Main	Chorlton cutting main compound	Newcastle Road to A531 Newcastle Road	Civil engineering – October 2020	Three years	6	44-44	69-92
			Site reinstatement – February 2026	Three months	1		
Satellite	Creamery Bridge satellite compound	Newcastle Road to the A531 Newcastle Road	January 2024	Two years three months	2	37-41	up to 10

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Compound type	Location	Access to / from compound to main road network	Indicative start/set up date	Estimated duration of use (years) ⁸⁷	Estimated duration of busy period (months)	Average daily combined two-way vehicle trips during busy period and within peak month of activity ⁸⁸	
						Cars/ LGV	HGV
Satellite	Crewe South portal satellite compound (including Casey Lane West satellite compound)	Site haul route to the A500 Shavington Bypass	Civil engineering – October 2020	Four years	7	33-33	52-64
			Site reinstatement – January 2026	Three months	1		24-24
			Rail systems – January 2024	Two years	1	36-36	up to 10
Satellite	Casey Lane East satellite compound	Site haul route to the A500 Shavington Bypass	January 2024	One year and six months	2	5-5	up to 10
Satellite	Basford Hall Southbound satellite compound	Site haul route to the A500 Shavington Bypass	January 2024	Two years and three months	5	34-124	up to 10
Main	Basford cutting main compound	A500 Shavington Bypass	Civil engineering July 2020	Four years and nine months	7	547-550	61-81
			Site reinstatement – January 2026	Civils is 3 years, with 3 years 3 months for worker accommodation and continued use as a main compound	Three months		1
Transfer node	Transfer node associated with Basford cutting main compound	A500 Shavington Bypass	January 2021	Four years	9	N/A	1078-1320
Main	Motorail Terminal main compound	A534 Nantwich Road	January 2021	Four years and nine months	2	50-78	13-13

- 7.3.12 Information on the indicative construction programme is provided in Section 2 of SES2 and the construction methodology is summarised in Volume 1, Section 6 of the main ES. This illustrates how the phasing of activities at different compounds will generally be staggered and that construction activities at individual compounds may not occur over the whole duration presented in Table 6.
- 7.3.13 Where construction routes serve more than one construction compound, the combined vehicle movements during the busiest period for each section of each route have been assessed. The effects resulting from changes to construction compounds have been considered and are reported in the highway network section.

Highway network

- 7.3.14 The main ES considered the traffic and transport effects in the area during construction. In particular, the effects associated with the combined construction traffic flows into and through the area were identified. The main ES reported that the significant effects related to increases in congestion and delay were at the following locations:
- A500 Shavington Bypass/B5472 Weston Road/A531 Newcastle Road roundabout – major adverse effect;
 - A500 Shavington Bypass/A5020 David Whitby Way roundabout – major adverse effect; and
 - A500 Shavington Bypass/B5071 Jack Mills Way roundabout – major adverse effect.
- 7.3.15 The AP2 revised scheme includes an amendment to acquire additional land temporarily to upgrade the site haul routes in the South Cheshire area (AP2-005-001). This amendment, combined with the improved access to and use of the site haul routes and changes to the movement and use of surplus excavated material, will reduce traffic queues and delays at the A500 Shavington Bypass/B5071 Jack Mills Way roundabout. The SES2 changes and AP2 amendments will reduce the level of significance of the effect on congestion and delay to vehicle occupants of the A500 Shavington Bypass/B5071 Jack Mills Way roundabout from a major adverse significant effect to a moderate adverse effect, which is significant.
- 7.3.16 There are other changes to traffic congestion and delay arising from the combination of SES2 changes and AP2 amendments however these do not result in new or different significant traffic effects. Changes to traffic are reported in SES2 and AP2 ES Volume 5: Appendix TR-001-000.
- 7.3.17 The main ES reported traffic severance⁸⁹ effects for non-motorised users from increases in either all traffic (including worker trips, light good vehicle (LGV) and heavy goods vehicle (HGV) traffic) or HGV traffic, which were significant at the following locations:

⁸⁹ In the context of traffic and transport, severance is used to relate to a change in ease of non-motorised users due to, for example, a change in travel distance or travel time or a change in traffic levels on a route that makes it harder for non-motorised users to cross. A reference to severance does not imply a route is closed to access.

- A500 Shavington Bypass between the A51 London Road and the M6 – moderate adverse effect as a result of an increase in all traffic;
- A51 London Road between Checkley Lane and the B5071 Wybunbury Road – major adverse effect as a result of an increase in HGV traffic;
- A51 London Road between the B5071 Wybunbury Road and the A500 Shavington Bypass – moderate adverse effect as a result of an increase in HGV traffic;
- A531 Newcastle Road between the A531 Weston roundabout and the A500 Meremoor roundabout – moderate adverse effect as a result of an increase in HGV traffic;
- Checkley Lane between the A51 London Road and the HS2 route – moderate adverse effect as a result of an increase in all traffic;
- Den Lane between Wrinehill Road and the West Coast Main Line (WCML) – major adverse effect as a result of an increase in all traffic;
- Casey Lane between Newcastle Road and the HS2 route – major adverse effect as a result of an increase in HGV traffic;
- Chorlton Lane between Waybutt Lane and Newcastle Road – minor adverse effect as a result of an increase in all traffic;
- Wybunbury Road between the A51 London Road and Wrinehill Road – major adverse effect as a result of an increase in HGV traffic; and
- Wrinehill Road between Bridge Street and Den Lane – moderate adverse effect as a result of an increase in all traffic.

7.3.18

Changes to the movement and use of surplus excavated material, and specifically the increased use of the site haul route from the A500 Shavington Bypass to Checkley Lane will result in a substantial reduction in the use of Checkley Lane, Wybunbury Road, Wrinehill Lane and Den Lane by construction HGV traffic. In particular, the use of these routes will be primarily for site set-up and utilities works. However, in some cases traffic in the peak month will reduce to a lesser degree (if at all). This will result in changes to the traffic severance effects for non-motorised users, as reported in the main ES, at the following locations:

- A51 London Road between Checkley Lane and the B5071 Wybunbury Road – a reduction in construction traffic flows on this section will reduce the level of significance of the effect from a temporary major adverse significant effect to a temporary moderate adverse effect, which is significant;
- Checkley Lane between the A51 London Road and the HS2 route – a reduction in construction traffic flows on this section will reduce the level of significance of the effect from a temporary moderate adverse effect to a temporary minor adverse effect, which is significant;

- Casey Lane between Newcastle Road and the HS2 route – a reduction in construction traffic flows on this section will remove the temporary major adverse significant effect;
- Wybunbury Road between the A51 London Road and Wrinehill Road – a reduction in duration of the busy period and a reduction in the total construction traffic flows on this section result in a materially different temporary major adverse effect, which is significant; and
- at the B5071 Link Road, there will be an increase in HGV traffic, as a result of the additional land required temporarily for a construction traffic route at the A500 Shavington Bypass (AP2-005-001), which includes improvements to the access arrangements for the construction traffic routes. This will give rise to a new temporary minor adverse traffic severance effect, which is significant, for non-motorised users between the construction access to the upgraded construction traffic route and the A500 Shavington Bypass.

7.3.19 There are other changes to construction traffic flows arising from the combination of SES2 changes and AP2 amendments, however these do not result in new or different significant traffic effects. Changes to traffic are reported in SES2 and AP2 ES Volume 5: Appendix TR-001-000.

Permanent effects

7.3.20 There are no permanent traffic and transport effects resulting from changes in construction traffic flows in the South Cheshire area.

Other mitigation measures

7.3.21 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

7.3.22 The SES2 changes and AP2 amendments will reduce the level of significance of the effect on congestion and delay to vehicle users of the A500 Shavington Bypass/B5071 Jack Mills Way roundabout from a temporary major adverse significant effect to a likely residual temporary moderate adverse effect, which is significant.

7.3.23 The SES2 changes and AP2 amendments will result in the following changes to the traffic severance effects for non-motorised users, as reported in the main ES, at the following locations:

- A51 London Road between Checkley Lane and the B5071 Wybunbury Road – will reduce from a temporary major adverse significant effect to a likely residual temporary moderate adverse significant effect;
- Checkley Lane between the A51 London Road and the HS2 route – will reduce from a temporary moderate adverse significant effect to a likely residual temporary minor adverse significant effect;
- Casey Lane between Newcastle Road and the HS2 route – will remove the temporary major adverse significant effect; and

- Wybunbury Road between the A51 London Road and Wrinehill Road – will result in a different likely residual temporary major adverse significant effect.

7.3.24 The SES2 changes and AP2 amendments will give rise to a new likely residual temporary minor adverse effect on traffic severance for non-motorised users of the B5071 Link Road, between the construction access to the upgraded site haul road and the A500 Shavington Bypass, which is significant.

Cumulative effects

7.3.25 This combined assessment has taken into account cumulative effects from background traffic growth, committed developments and traffic and transport impacts arising from the SES2 changes and AP2 amendments in this area and other community areas.

7.4 Air quality

Scope, assumptions and limitations

7.4.1 The assessment scope, key assumptions and limitations for air quality are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

7.4.2 As set out in Volume 1, since the production of the main ES, updated background pollutant concentrations and road vehicle emission factors have become available from Defra. These have been used in this assessment. The updated road vehicle emission factors are higher for NO_x than those used in the main ES, especially along motorways. Therefore, higher concentrations have been predicted for the future baseline scenario (without the HS2 scheme). At locations where NO₂ concentrations are predicted to exceed the annual mean air quality standard of 40µg/m³ without the scheme, it is more likely that a small increase in concentrations due to the scheme will result in a significant effect.

Environmental baseline

Existing baseline

7.4.3 The existing baseline for air quality is as described in Volume 2, CA5, Section 5 of the main ES.

7.4.4 Since the production of the main ES, air quality measurements for the baseline year of 2016 have become available. There are currently 11 relevant diffusion tube sites located within the South Cheshire area for monitoring NO₂ concentrations. These are located along Earle Street, Crewe (A532); Hospital Street, Crewe Road and Nantwich Road, Nantwich (A534) and the M6. Measured NO₂ concentrations in 2016 were above the air quality standard at one of these sites, located along the A534 Nantwich Road. Details of their location and data measurements are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-005 and Map Series AQ-01 which accompany the SES2 and AP2 ES.

- 7.4.5 The updated background concentrations from Defra⁹⁰ are within the air quality standards for all pollutants in the baseline year of 2016 within the South Cheshire area. Details are provided in Background Information and Data (BID) documents (BID-AQ-002-000), which accompany the SES2 and AP2 ES.

Future baseline

Construction (2020)

- 7.4.6 The updated background concentrations from Defra for the first year of construction in 2020 predict NO₂, PM₁₀ and PM_{2.5} levels in 2020 to be lower than in the 2016 baseline and within the relevant air quality standards.
- 7.4.7 Volume 5: Appendix CT-004-000 of the SES2 and AP2 ES provides details of the developments which are assumed to have been implemented by 2020 for construction, additional to those identified in the main ES. These have been included as future receptors in the assessment of air quality impacts and are detailed in Volume 5: Appendix AQ-001-005.
- 7.4.8 None of the identified developments affect the assessment of the SES2 scheme and AP2 revised scheme's likely construction and operation impacts on air quality.

Effects arising during construction

Avoidance and mitigation measures

- 7.4.9 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

Temporary effects

- 7.4.10 Construction activity could affect local air quality through the additional traffic generated on local roads as a result of construction vehicles and through changes to traffic patterns arising from temporary road diversions and realignments.
- 7.4.11 The assessment of construction traffic emissions has been undertaken for a 'without scheme' scenario and a 'with scheme' scenario. The traffic data for each scenario includes the additional traffic from future committed developments.
- 7.4.12 Construction traffic data in the area has been screened to identify roads that required further assessment and to confirm the likely effect of the change in emissions from vehicles using those roads in the construction period. These were primarily the main roads within the South Cheshire area, including the M6 motorway, the A500 Newcastle Road/Shavington Bypass, the B5071 Stock Lane, Den Lane, A5020 David Whitby Way and a new road between Newcastle Road and Weston Lane.
- 7.4.13 Concentrations of NO₂ are predicted to exceed the air quality standard at one residential receptor close to the M6 in east Cheshire. However, NO₂ concentrations in this area are predicted to exceed the air quality standard even without the scheme.

⁹⁰ Department for Environment, Food and Rural Affairs (Defra) (2015) Defra Background Pollutant Concentration Maps; Available online at: <http://uk-air.defra.gov.uk/data/laqm-background-maps?year=2013>; Accessed: August 2018

A new significant effect is predicted at this receptor for NO₂ concentrations, close to the M6 in east Cheshire. However, the AP2 revised scheme reduces HS2 construction traffic along this section of the M6, compared to the main ES. Therefore, the new significant effect at this location is mainly due to changes in predicted emissions in the revised future baseline. No new or different significant effects are predicted at other receptors for NO₂ concentrations in the South Cheshire area.

- 7.4.14 Concentrations of PM₁₀ and PM_{2.5} are predicted to be within the relevant air quality standards during construction of the AP2 revised scheme. No new or different significant effects are predicted at any receptor for PM₁₀ and PM_{2.5} concentrations during construction of the AP2 revised scheme. Details are provided in the SES2 and AP2 ES Volume 5: Appendix AQ-001-005.
- 7.4.15 No new or different significant effects are predicted at any ecological receptors during construction of the AP2 revised scheme in the South Cheshire area.

Permanent effects

- 7.4.16 No permanent effects on local air quality are likely to arise from changes in construction traffic flows in the South Cheshire area.

Other mitigation measures

- 7.4.17 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 7.4.18 The change in construction traffic flows from the SES2 design changes and AP2 amendments will give rise to a new likely residual significant effect at one residential receptor close to the M6 in east Cheshire in relation to exceedances of NO₂ concentrations. However, NO₂ concentrations in this area are predicted to exceed the air quality standard even without the scheme. The AP2 revised scheme reduces HS2 construction traffic along this section of the M6, compared to the main ES. Therefore, the new significant effect at this location is mainly due to changes in predicted emissions in the revised future baseline. No likely residual significant effects are anticipated at other locations in the South Cheshire area.

Cumulative effects

- 7.4.19 This combined assessment has taken into account cumulative effects from background traffic growth, committed developments and impacts related to traffic emissions arising from the SES2 changes and AP2 amendments in this area and other community areas.

7.5 Sound, noise and vibration

Scope, assumptions and limitations

- 7.5.1 The assessment scope, key assumptions and limitations for sound, noise and vibration are as set out in Volume 1 and the SMR of the main ES.

Environmental baseline

Existing baseline

- 7.5.2 The baseline sound, noise and vibration information for the South Cheshire area is as described in Volume 2, CA5, Section 13 of the main ES.

Future baseline

Construction (2020)

- 7.5.3 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.5.4 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

- 7.5.5 The main ES identified an indirect likely construction significant effect, on a community basis, at 35 residential dwellings located adjacent to Den Lane from the junction with Mill Lane to the junction with the A531 at Wrinehill. This was denoted as CSV05-Co6 in the main ES Volume 5: Appendix SV-002-005.
- 7.5.6 The change reduces the monthly construction road traffic movements on Den Lane, and thus reduces the associated construction traffic noise levels. For further information on sound, noise and vibration, see SES2 and AP2 ES Volume 5: Appendix SV-002-000. This change reduces the amount of construction traffic on this route compared to the main ES, such that the moderate impacts identified in the main ES at approximately 35 residential properties are reduced to minor impacts. However, both moderate and minor impacts are considered to have a likely significant effect on a community basis and therefore, the reduction in impact due to the change in construction traffic will not give rise to any new or different likely residual significant effects and does not change the level of significance reported in the main ES.

Cumulative effects

- 7.5.7 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.6 Community

Scope, assumptions and limitations

- 7.6.1 The assessment scope, key assumptions and limitations for community are as set out in Volume 1, the SMR and SMR Addendum of the main ES.

Environmental baseline

Existing baseline

- 7.6.2 The baseline community information for the South Cheshire area is as described in Volume 2, CA5, Section 6 of the main ES.
- 7.6.3 Between the settlements of Wrinehill and Blakenhall are a number of sparsely located, detached rural farm properties along Den Lane and Checkley Lane.

Future baseline

Construction (2020)

- 7.6.4 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.6.5 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

Temporary effects

- 7.6.6 The main ES, as amended by SES2, reported that approximately seven properties on Checkley Lane would experience significant temporary adverse visual effects due to construction works. The main ES further reported that six of these properties would experience a significant temporary adverse HGV effect and four of these properties would experience a significant temporary adverse noise effect. The in-combination effect would result in a temporary major adverse significant effect at the seven properties.
- 7.6.7 The changes to construction traffic flows will remove the significant adverse HGV effect on properties on Checkley Lane. The changes in traffic flows are primarily due to the increase in site haul routes from the A500 Shavington Bypass to limit construction traffic on the road network. This will result in two of these properties no longer being subject to a significant in-combination effect, taking the overall number of properties affected from seven to five. This will give rise to a different in-combination effect, however this will not change the level of significance of the effect reported in the main ES, as amended by SES2. For further information see SES2 and AP2 ES Volume 5: Appendix CM-001-000 and SES2 and AP2 ES Volume 5: Community Map Book.

Permanent effects

- 7.6.8 The changes in traffic flows will not give rise to a new or different significant permanent effect and will not change the level of significance of the permanent effects, as reported in the main ES.

Other mitigation measures

- 7.6.9 No mitigation measures additional to those reported in the main ES and draft CoCP are required.

Summary of likely residual significant effects

- 7.6.10 The changes to traffic flows will give rise to a different likely residual temporary significant effect, due to the removal of a significant HGV effect on Checkley Lane and therefore a decrease in the number of properties on Checkley Lane subject to significant in-combination effects, from seven properties to five. However, this will not change the level of significance of the effects reported in the main ES, as amended by SES2.

Cumulative effects

- 7.6.11 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.7 Socio-economics

Scope, assumptions and limitations

- 7.7.1 The assessment scope, key assumptions and limitations for socio-economics are as set out in Volume 1 and the SMR of the main ES.

Environmental baseline

Existing baseline

- 7.7.2 The existing baseline for socio-economics is as described in Volume 2, CA5, Section 12 of the main ES.

Future baseline

Construction (2020)

- 7.7.3 The future baseline for construction in 2020 remains unchanged from that reported in the main ES Volume 5: Appendix CT-004-000.

Effects arising during construction

Avoidance and mitigation measures

- 7.7.4 No avoidance or mitigation measures additional to those reported in the main ES and draft CoCP are required.

Assessment of impacts and effects

Temporary effects

- 7.7.5 Construction activity could affect businesses as a result of the environmental effects associated with the additional traffic generated on local roads by construction vehicles and changes to traffic patterns arising from temporary road diversions and

realignments. These environmental effects include road congestion, increased noise and air pollution.

- 7.7.6 A combination of these effects on businesses may lead users to divert trade to other locations which do not experience these effects. Only certain types of businesses will be particularly sensitive to their surroundings and these will be drawn from sectors like hospitality, catering, recreational/cultural and retail (depending on circumstances).
- 7.7.7 Businesses identified as sensitive to environmental effects with two or more significant adverse effects drawn from other environmental topics are considered to be affected by in-combination effects, as set out in the SMR and SMR Addendum of the main ES.
- 7.7.8 Based on a review of the environmental effects, no new or different significant in-combination effects are predicted at any business receptors as a result of changes to construction traffic flows.

Permanent effects

- 7.7.9 The changes in traffic flows will not give rise to a new or different significant permanent effect and will not change the level of significance of the permanent effects, as reported in the main ES.

Other mitigation measures

- 7.7.10 No mitigation measures additional to those reported in the main ES and the draft CoCP are required.

Summary of likely residual significant effects

- 7.7.11 No new or different residual significant effects are likely in the South Cheshire area as a result of changes to construction traffic flows from the SES2 design changes and AP2 amendments.

Cumulative effects

- 7.7.12 This combined assessment has taken into account cumulative effects from changes in traffic flows as a result of the all SES2 changes and AP2 amendments in this area and other community areas.

7.8 Summary of new or different likely residual significant effects as a result of combined effects due to changes in traffic flows

- 7.8.1 The SES2 changes and AP2 amendments will reduce the level of significance of the effect on congestion and delay to vehicle users of the A500 Shavington Bypass/B5071 Jack Mills Way roundabout from a temporary major adverse effect to a likely residual temporary moderate adverse effect.
- 7.8.2 The SES2 changes and AP2 amendments will reduce the level of significance of the traffic severance effects for non-motorised users of: the A51 London Road, between Checkley Lane and the B5071 Wybunbury Road, from a temporary major adverse effect to a likely residual temporary moderate adverse effect; and Checkley Lane, between the A51 London Road and the HS2 route, from a temporary moderate adverse effect to a likely residual temporary minor adverse effect. There will be a

different likely residual temporary adverse significant effect on traffic severance for non-motorised users of Wybunbury Road, between the A51 London Road and Wrinehill Road. However, this will not change the level of significance of the effects reported in the main ES. The temporary major adverse significant effect on traffic severance on non-motorised users of Casey Lane, between Newcastle Road and the HS2 route, will be removed.

- 7.8.3 The SES2 changes and AP2 amendments will give rise to a new likely residual temporary minor adverse significant effect on traffic severance for non-motorised users of the B5071 Link Road, between the construction access to the upgraded site haul road and the A500 Shavington.
- 7.8.4 The change in construction traffic flows from the SES2 design changes and AP2 amendments will give rise to a new likely residual significant effect on air quality at one residential receptor close to the M6 in Cheshire East in relation to exceedances of NO₂ concentrations. The new significant effect at this location is mainly due to changes in predicted emissions in the revised future baseline.
- 7.8.5 The changes to construction traffic flows will give rise to a different likely residual temporary significant effect, due to a decrease in the number of properties on Checkley Lane subject to an in-combination effect. However, this will not change the level of significance of the effects reported in the main ES, as amended by SES2.

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