

High Speed Rail (Crewe – Manchester)

Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement

Volume 1: Introduction and methodology

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Additional Provision 2 Environmental Statement**

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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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Preface

This document is Volume 1 of the Supplementary Environmental Statement 2 (SES2) and Additional Provision 2 Environmental Statement (AP2 ES) for the High Speed Rail (Crewe – Manchester) scheme.

The SES2 sets out the new, different or removed likely significant effects identified since the High Speed Rail (Crewe – Manchester) Environmental Statement¹ (the main ES), deposited in January 2022, and the Supplementary Environmental Statement 1 (SES1) and Additional Provision 1 Environmental Statement (AP1 ES)², deposited in July 2022. Changes to the effects may result from:

- changes to the design within the existing High Speed Rail (Crewe – Manchester) Bill ('the Bill') powers and limits;
- changes to the construction assumptions within the existing Bill powers and limits;
- changes to environmental baseline information; and
- corrections to the main ES and/or SES1 and AP1 ES as relevant.

An Additional Provision to the Bill is required for any amendments to the scheme that amend the Bill as deposited. The AP2 ES reports any new, different or removed likely significant effects likely to result from amendments to the Bill.

The SES2 and AP2 ES are being deposited as supplementary information under Private Business Standing Order 224A of the House of Commons and Standing Order 83A of the House of Lords (Comments on environmental statement).

The SES2 and AP2 ES has been prepared by persons who have sufficient expertise to ensure the completeness and technical quality of the ES. The qualifications of the teams responsible for producing the SES2 and AP2 ES are set out in the High Speed Rail (Crewe – Manchester) SES2 and AP2 ES Competency Statement³.

Consultation on the SES2 and AP2 ES

The SES2 and the AP2 ES will each be the subject of a public consultation in accordance with Parliamentary procedure. Members of the public will have a period of at least 42 days (six

¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

³ High Speed Two Ltd (2023), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 2 and Additional Provision 2 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-2-and-additional-provision-2-environmental-statement>.

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weeks) within which to make representations following the deposit of the SES2 and AP2 ES in Parliament and the first publication of the necessary newspaper notices that follows.

There will also be a separate petitioning period in relation to AP2. Within this period, persons whose property or interests that are specially and directly affected by the amendments to the Bill for which powers are sought under AP2 will have the right to petition.

Structure of the SES2 and AP2 ES

This report is part of the suite of documents that make up the SES2 and AP2 ES for the High Speed Rail (Crewe – Manchester) Bill. The SES2 and the AP2 ES are separate documents, however, they are bound together and presented in a number of volumes shown in Figure 1 and described below:

- **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, different or have been removed compared to those reported in the main ES or the SES1 and AP1 ES, where relevant;
- **Glossary of terms, list of abbreviations and references.** This contains any terms and abbreviations used throughout the SES2 and the AP2 ES, and provides all references cited in each of the volumes listed below;
- **Volume 1: Introduction to the SES2 and the AP2 ES.** This introduces the supplementary environmental information and changes to the design and to the construction assumptions included within the SES2 and amendments within the AP2 ES. The report explains the environmental impact assessment (EIA) process which has been applied;
- **Volume 2: Community area reports and map books.** These report the supplementary environmental information and changes to the design and to the construction assumptions included within the SES2 (Part 1), amendments within the AP2 ES (Part 2) and any new, different or removed likely significant environmental effects arising from these changes and amendments in the following community areas:
 - MA01: Hough to Walley's Green;
 - MA02: Wimboldsley to Lostock Gralam;
 - MA03: Pickmere to Agden and Hulseheath;
 - MA06: Hulseheath to Manchester Airport;
 - MA07: Davenport Green to Ardwick; and
 - MA08: Manchester Piccadilly Station.

Note, through the SES1, the removal of the HS2 West Coast Main Line (WCML) connection, included in the original scheme, has removed the community areas of Broomedge to Glazebrook (MA04) and Risley to Bamfurlong (MA05) from the HS2 Phase 2b Western Leg. Where changes in the combined traffic assessment result in effects that would have been reported in these two community areas, they are instead reported in the Hulseheath to Manchester Airport (MA06) community area report.

The environmental effects in the Volume 2 reports are compared to those reported in the main ES, the SES1 or AP1 ES as 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.

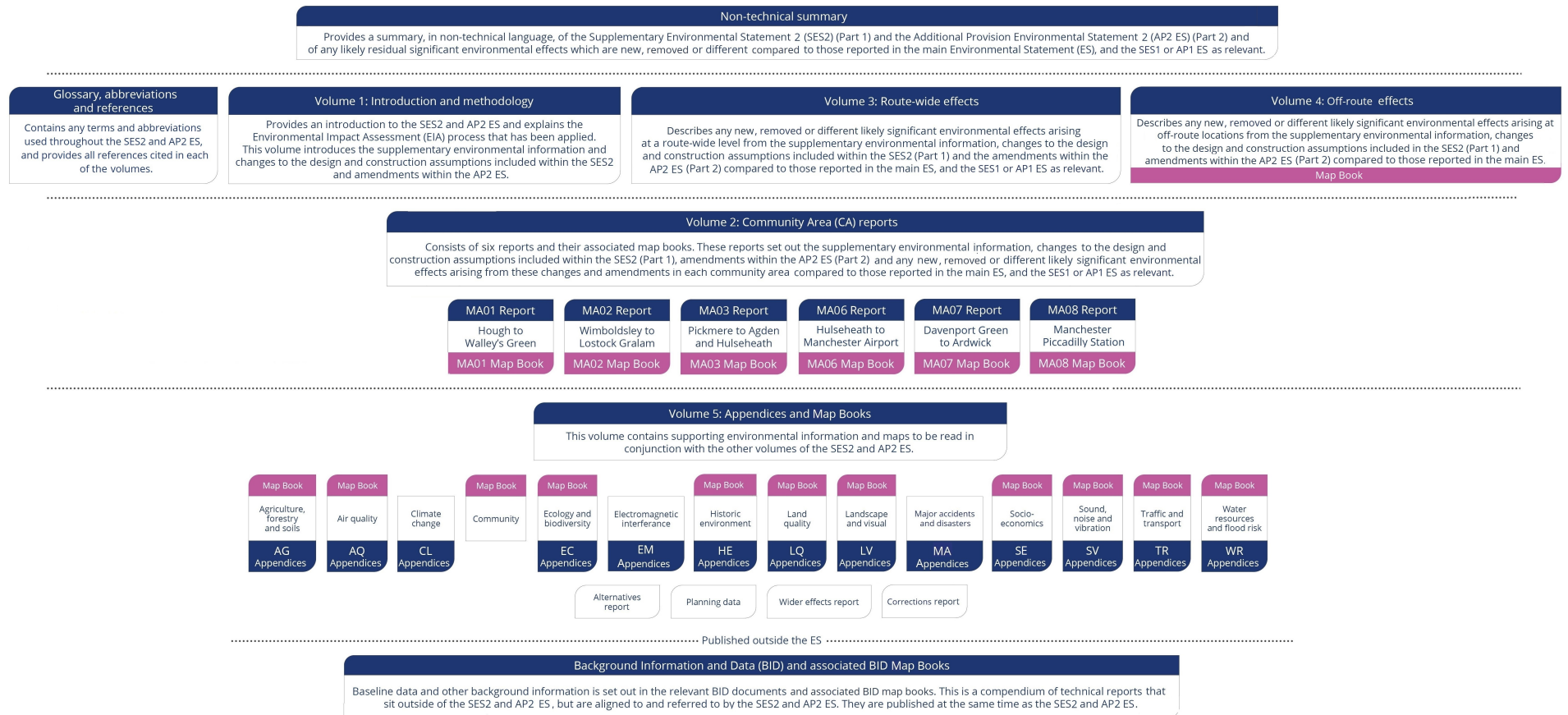
- **Volume 3: Route-wide effects.** This describes any new, different or removed likely significant environmental effects arising at a route-wide level from the supplementary environmental information and changes to the design and to the construction assumptions included within the SES2 (Part 1) and the amendments within the AP2 ES (Part 2) compared to those reported in the main ES, the SES1 or AP1 ES as relevant;
- **Volume 4: Off-route effects.** Describes any new, different or removed likely significant environmental effects arising at locations beyond the route corridor between Crewe and Manchester from the supplementary environmental information, changes to the design and construction assumptions included in the SES2 (Part 1) and amendments within the AP2 (Part 2) compared to those reported in the main ES; and
- **Volume 5: Appendices and map books.** These contain supporting environmental information and associated maps.

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: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-2-and-additional-provision-2-environmental-statement>. The BID documents and maps present background survey information and other relevant background material.

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Figure 1: Structure of the SES2 and AP2 ES



1 Introduction

1.1 Background to High Speed Rail (Crewe – Manchester) and the need for SES2 and AP2 ES

- 1.1.1 The High Speed Rail (Crewe – Manchester) Bill ('the Bill') was submitted to Parliament together with an Environmental Statement (ES) ('the main ES') in January 2022. If enacted by Parliament, the Bill will provide the powers to construct, operate and maintain the HS2 Phase 2b Western Leg.
- 1.1.2 This phase of HS2 will provide the section of the route between Crewe and Manchester, including: new stations at Manchester Airport and Manchester Piccadilly; a depot north of Crewe and maintenance facilities; a connection between the HS2 route and the WCML at Crewe, enabling future Northern Powerhouse Rail (NPR) services to connect with HS2; provision for future NPR routes to connect with HS2; works at locations beyond the Western Leg route corridor (referred to as 'off-route works') to enable HS2 trains to call at existing stations further north on the WCML; and depots to provide overnight stabling for HS2 trains serving the north of England and Scotland.
- 1.1.3 Following the deposit of the Bill, the need for changes to the design which do not require amendments to the Bill, changes to construction assumptions, new environmental baseline information and corrections to the main ES were identified. These changes were reported in the Supplementary ES 1 ('the SES1'). The SES1 was accompanied by the Additional Provision 1 ES (the 'AP1 ES') which reported changes that required amendments to the Bill. The Additional Provision (referred to hereafter as 'AP1'), together with the ES ('the SES1 and AP1 ES') were deposited with Parliament in July 2022. The SES1 and AP1 ES included changes and amendments in the following community areas:
- MA01: Hough to Walley's Green;
 - MA02: Wimboldsley to Lostock Gralam;
 - MA03: Pickmere to Agden and Hulseheath;
 - MA04: Broomedge to Glazebrook; and
 - MA05: Risley to Bamfurlong.
- 1.1.4 Of particular note, the SES1 included removal of the HS2 WCML connection near Bamfurlong, included in the original scheme, from the Bill. This removed the community areas of Broomedge to Glazebrook (MA04) and Risley to Bamfurlong (MA05) from the HS2 scheme.
- 1.1.5 Since the submission of the SES1 and AP1 ES, the need for further changes in all community areas and for the off-route areas have been identified. Any new or different significant effects that are likely to result from these changes, where these do not require amendments to the Bill, are reported in the SES2.

- 1.1.6 Amendments which require changes to the Bill are reported in the AP2 ES. The AP2 ES reports the likely significant environmental effects of these amendments, having taken into account the environmental information in the SES2. Some of the AP2 ES amendments interact with or alter certain proposals included within AP1. Where this is the case, this is reported in the relevant volume report.
- 1.1.7 These design changes and amendments have arisen through ongoing discussions with stakeholders and as a result of design refinements.
- 1.1.8 The assessment of the original scheme and the assessment of the AP1 revised scheme assumed that construction would commence in 2025, with the start of operation in 2038. As a result of a change to construction assumptions the SES2 and AP2 ES assumes that the first year of construction will be 2026, with the first year of operation in 2039.
- 1.1.9 The SES2 and the AP2 ES are separate environmental statements but have been produced as combined volumes. The SES2 is presented first, and the AP2 ES follows.

1.2 Terminology used to describe the scheme

- 1.2.1 The 'original scheme' is the Bill scheme submitted to Parliament in January 2022, which was assessed in the main ES.
- 1.2.2 In the SES1 and AP1 ES, in order to differentiate between the original scheme and the subsequent changes, the following terms were used:
- 'the SES1 scheme' – the original scheme with the changes described in SES1, as submitted in July 2022 (that is the SES1 changes as defined below); and
 - 'the AP1 revised scheme' – the SES1 scheme as amended by AP1, as submitted in July 2022 (that is the AP1 amendments as defined below).
- 1.2.3 In the SES1 and AP1 ES, the following terms were used to differentiate between changes included in the SES1 and those included in the AP1 ES:
- 'SES1 design changes' – changes to the scheme design reported in SES1 that do not require additional powers;
 - 'SES1 changes' – all changes reported in SES1 (including SES1 design changes) 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.
- 1.2.4 For the SES2 and AP2 ES the following terminology is used:
- 'the SES2 scheme' – the original scheme with any changes described in SES1 and the SES2;
 - 'the AP2 revised scheme' – the original scheme as amended by SES1 and SES2 changes (as relevant) and AP2 amendments;

- ‘SES2 design changes’ – changes to the scheme design reported in the SES2 that do not require additional powers;
- ‘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.

1.3 Scope of the SES2 and AP2 ES

- 1.3.1 The SES2 and AP2 ES report the assessment of SES2 changes and AP2 amendments for the scheme in the following community areas and off-route works areas:
- MA01: Hough to Walley’s Green;
 - MA02: Wimboldsley to Lostock Gralam;
 - MA03: Pickmere to Agden and Hulseheath;
 - MA06: Hulseheath to Manchester Airport;
 - MA07: Davenport Green to Ardwick;
 - MA08: Manchester Piccadilly Station; and
 - Off-route works: Annandale depot.
- 1.3.2 Through the SES1, the community areas Broomedge to Glazebrook (MA04) and Risley to Bamfurlong (MA05) have been removed from the original scheme. Any effects as a result of the SES2 changes or AP2 amendments that would have been reported in these two community areas are reported in the Hulseheath to Manchester Airport (MA06) community area report.
- 1.3.3 The specific technical scope included in each of the assessments is described in the relevant volume or report.
- 1.3.4 Figure 2 shows the community areas that are included in the scope of the SES2 and AP2 ES.
- 1.3.5 Figure 3 shows the locations of the off-route works included in the scope of the SES2 and AP2 ES.

Figure 2: Community areas included in the scope of the SES2 and AP2 ES

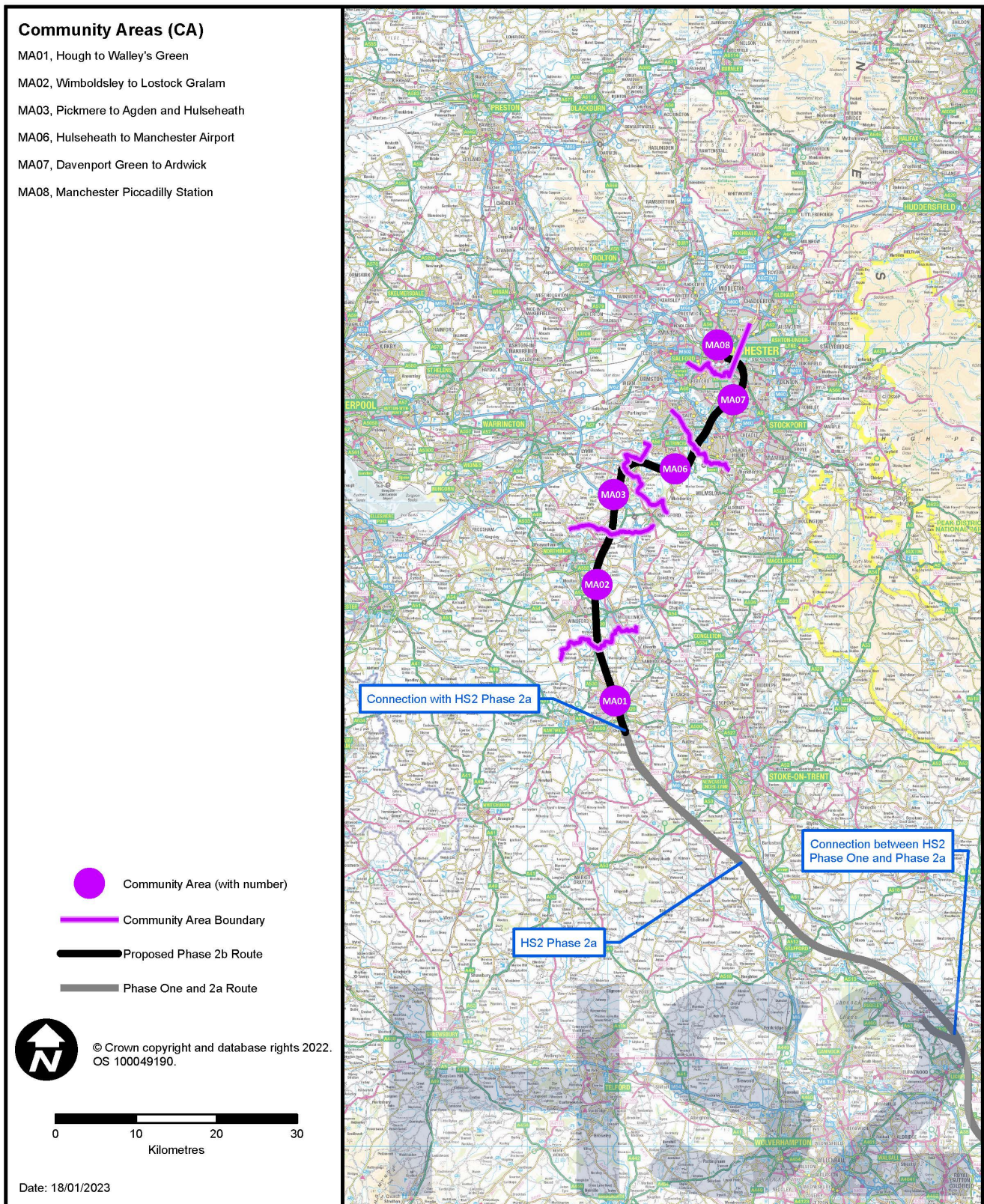
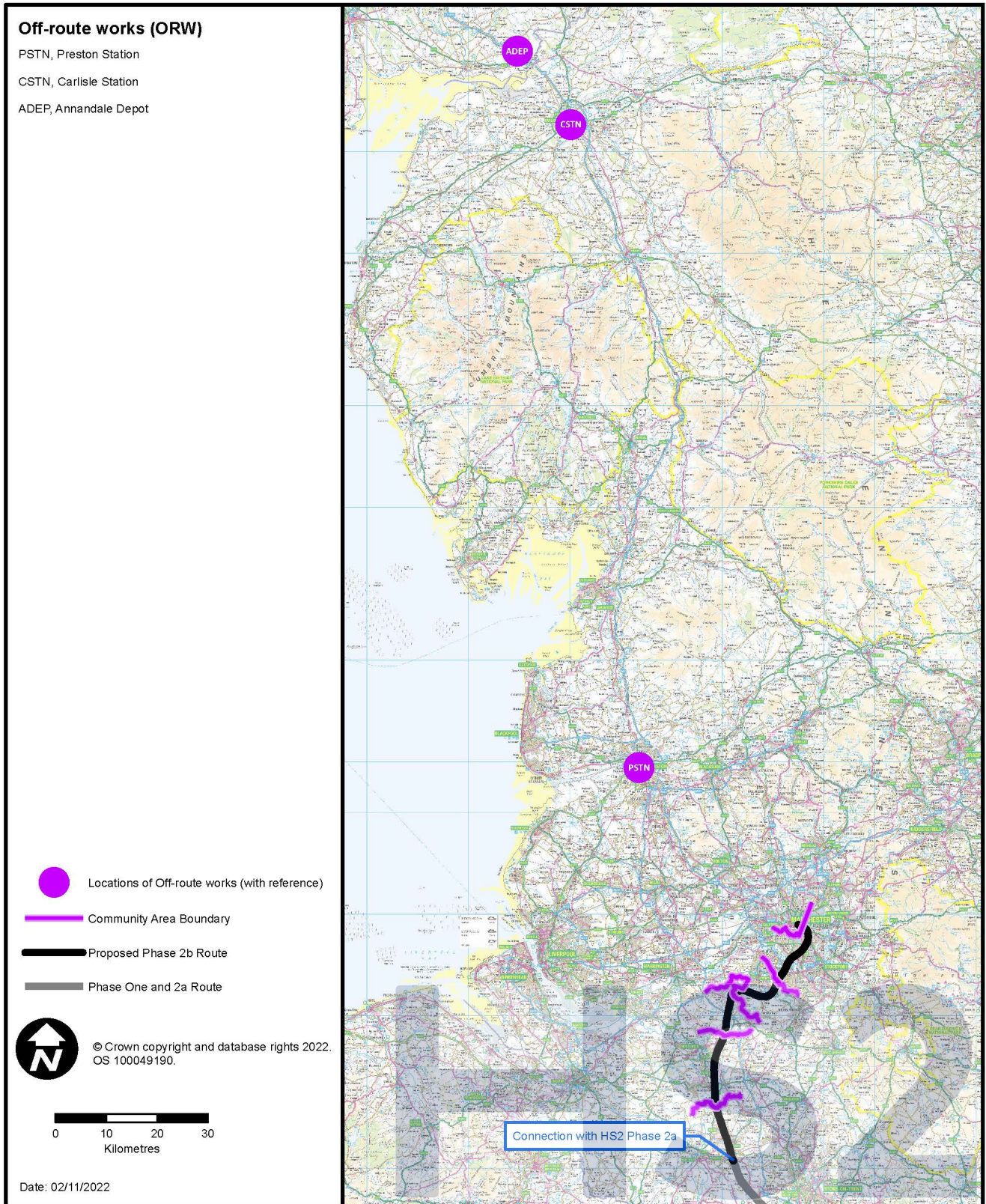


Figure 3: Locations of the off-route works included in the scope of the SES2 and AP2 ES



1.4 Structure of this volume

1.4.1 The remainder of this report is structured as follows:

- Section 2: introduction to the SES2, outlining the approach to:
 - new and updated environmental baseline information;
 - changes to the design or to the construction assumptions within the existing powers of the Bill;
 - SES2 design changes; and
 - corrections to the main ES and the SES1;
- Section 3: introduction to the AP2 amendments and the AP2 ES, including a summary of the AP2 amendments;
- Section 4: scope and methodology of the SES2 and the AP2 ES. The section sets out any updates or changes to the scope, methodology, assumptions and limitations to the assessment of environmental effects;
- Section 5: approach to the appendices within the SES2 and the AP2 ES;
- Section 6: approach to mapping within the SES2 and the AP2 ES;
- Section 7: approach to mitigation and monitoring associated with the SES2 and the AP2 ES; and
- Section 8: consultation on the SES2 and the AP2 ES.

2 Introduction to the SES2

2.1 Introduction

2.1.1 The SES2 describes:

- new and updated environmental baseline information;
- changes to the design or to the construction assumptions;
- SES2 design changes; and
- corrections to information in the main ES and the SES1, where relevant.

2.1.2 Any new, different or removed likely significant environmental effects that result from these changes will be compared to those reported in the main ES or the SES1, as relevant depending on the community area. Some of the AP2 ES amendments interact with or alter certain proposals included within AP1. Where this is the case, this is reported in the relevant volume report.

2.1.3 These changes can be made within the existing powers of the Bill and, therefore, no amendments to the powers conferred by the Bill are required for these changes.

2.2 New and updated environmental baseline information

2.2.1 Since the main ES and SES1, updated and new environmental baseline information has become available from surveys and desk-based research. This includes additional information concerning the environmental conditions for the following environmental topics:

- air quality: updated traffic baseline and future baseline models and associated background air pollution concentrations have been made available for the air quality assessment;
- climate change: updates to the data sources used in the greenhouse gas assessment including an update to the published Green Book and greenhouse gases (GHG) conversion factors from the Department for Business, Energy and Industrial Strategy (BEIS) and updates to operational rolling stock energy consumption figures;
- community: updated baseline based on a review of residential properties, community resources, recreational facilities and open spaces;
- ecology and biodiversity: additional Phase 1 habitat surveys, hedgerow, National Vegetation Classification (NVC), pond and canal, river habitat, bat, great crested newt, otter and water vole surveys have been completed;
- health: updated baseline based on a review of residential properties, community resources, healthcare facilities, recreational and educational resources and open spaces;

- historic environment: updated baseline including additional heritage assets where this is relevant to the SES2 scheme and AP2 revised scheme;
- land quality: updated environmental regulatory data including pollution incidents, radioactive and hazardous substances consents, environmental permits and ecological receptors;
- socio-economics: updated baseline information reflecting changes to economic activity and the labour market, employment land needs and vacancy rates for warehouses, industrial property and office space;
- sound, noise and vibration: updated traffic data used to update existing and future baseline sound modelling;
- traffic and transport: additional traffic information has been used in the development of updated baseline and future baseline models which includes recently committed or completed transport schemes. There has also been a change in the future baseline forecast years from 2030 to 2031 for the peak level of construction traffic activity and 2038 to 2039 for the opening year;
- waste and material resources: updates to the published data for national commercial and industrial waste; and
- water resources and flood risk: updates to the baseline based on surveys and additional water quality data collected from a number of watercourses as well as updated peak rainfall intensity allowances using United Kingdom Climate Projections (UKCP) local projections of extreme rainfall.

Journey times

2.2.2 There have been changes to the current fastest standard journey times by conventional rail from those reported in the main ES and the SES1 and AP1 ES. Table 1 provides the current fastest standard journey times by conventional rail between key destinations. The fastest standard journey times by conventional rail reported in the main ES and SES1 and AP1 ES are provided for comparison.

Table 1: Fastest standard journey times by conventional rail reported in the main ES and the SES1 and AP1 ES compared to the SES2 and AP2 ES

Train origin/destination	Train destination/origin	Fastest standard hour journey time by conventional rail (hours:minutes) reported in the main ES and SES1 and AP1 ES	Current fastest standard hour journey time by conventional rail (hours:minutes) reported in the SES2 and AP2 ES ⁴
London	Preston	2:08	2:08
	Liverpool Lime Street	2:14	2:14
	Glasgow (Central)	4:30	4:29
	Edinburgh (Waverley)	4:22	4:20

⁴ These times are based on current train flows and timetabling for conventional rail services (i.e. non-HS2 services) and therefore may be subject to change.

Train origin/ destination	Train destination/ origin	Fastest standard hour journey time by conventional rail (hours:minutes) reported in the main ES and SES1 and AP1 ES	Current fastest standard hour journey time by conventional rail (hours:minutes) reported in the SES2 and AP2 ES ⁴
	Manchester Piccadilly	2:04	2:06
Birmingham	Glasgow (Central)	4:02	4:02
	Edinburgh (Waverley)	4:07	4:03

2.2.3 Fastest standard journey times between key destinations with the AP2 revised scheme in operation are reported and assessed in the SES2 and AP2 ES Volume 3, Route-wide effects.

2.3 Changes to the design or to the construction assumptions

2.3.1 Changes to the design and to the construction assumptions where they result in new, different or removed likely significant environmental effects from those reported in the main ES or the SES1, are provided in the Volume 2, Community Area reports or Volume 4, Off-route effects report, where relevant.

2.3.2 Changes to the indicative construction programmes from those presented in the main ES and SES1, are also included in the Volume 2, Community Area reports and the Volume 4, Off-route effects report.

2.4 SES2 design changes

2.4.1 Table 2 provides a list of the SES2 design changes. All of the changes are described in Part 1 of the relevant SES2 and AP2 ES Volume 2, Community Area report and shown in the relevant map books.

Table 2: Summary of SES2 design changes

SES2 design change	Community area	Report where change is described
Modifications to Mobberley Road realignment, Mid Cheshire (Railway) and Mobberley Road viaduct and Thorns Green embankment SES2-006-001	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Modifications to car park roofs and forecourts at Manchester Airport High Speed station SES2-006-002	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Reconfiguration of Manchester tunnel south portal headhouse to accommodate the revised spatial requirements for rail systems equipment SES2-007-001	MA07	SES2 and AP2 ES Volume 2, Davenport to Ardwick Green Community Area report (MA07)

SES2 design change	Community area	Report where change is described
Provision of a 6.6kV underground cable between the existing Electricity North West Primary Substation and the relocated Piccadilly Metrolink stop beneath Manchester Piccadilly High Speed station SES2-008-001	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Alterations to the pier structures beneath Piccadilly approach viaduct and gyratory northbound highway alignment SES2-008-002	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Relocation of North Block comprising Network Rail facilities at Manchester Piccadilly High Speed station SES2-008-003	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Relocation of six substations at Manchester Piccadilly High Speed station SES2-008-004	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Change to requirement/assessment assumption for the demolition of Gateway House SES2-008-005	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Provision of a 60m section of water main at Store Street SES2-008-006	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)

2.5 Corrections to the main ES and the SES1

- 2.5.1 The need for some corrections to the contents of the main ES and the SES1 and AP1 ES has been identified. These are set out in Section 2 of each community area report of the SES2, where the corrections relate to a Volume 2, Community Area report; in Volume 3 where the corrections relate to route-wide matters reported in Volume 3 and in Volume 5, Appendix: CT-009-00000 where the corrections relate to Volume 5.
- 2.5.2 Corrections have been made where it was identified that they had the potential to result in a new, different or removed significant effect from that previously reported, or where a factual inaccuracy relating to a significant effect was identified. The information provided in the relevant reports identifies the location of the text that is subject to the correction, the reason for the correction, the text that was previously reported, and identifies whether the correction changes a significant effect. Where relevant, these corrections have been taken into account in the technical assessments contained within the SES2 and AP2 ES.

3 Introduction to the AP2 ES

3.1 Introduction

- 3.1.1 Since the main ES and the SES1 and AP1 ES, the need for a number of amendments has been identified as a result of discussions with stakeholders and design refinements. These amendments include requirements for the acquisition or use of land outside the existing powers of the Bill, additional access rights, or other changes to the powers conferred by the Bill. AP2 seeks powers to make these amendments.
- 3.1.2 The AP2 ES reports the likely new, different or removed significant environmental effects of the amendments sought in the AP2. The comparison is based upon effects reported in the main ES, SES1 or SES2, as relevant, taking into account the AP1 ES as appropriate.

3.2 Summary of the AP2 amendments

- 3.2.1 Table 3 provides a list of the AP2 amendments, the community area in which these changes occur and the name of the report where a full description is provided. The AP2 amendments are either described in Part 2 of the relevant Volume 2, Community Area report and are shown in the relevant Volume 2 map books or for off-route works they are described in Volume 4, Off-route effects and shown in the Volume 4 map book.

Table 3: Summary of the AP2 ES amendments

AP2 ES amendment	Community area	Report where change is described
Additional land temporarily required for modifications to the B5076 Bradfield Road and Parkers Road junction AP2-001-001	MA01	SES2 and AP2 ES Volume 2, Hough to Walley's Green Community Area report (MA01)
Additional land permanently required for modifications to the Warmingham Road and Hall Lane junction AP2-001-002	MA01	SES2 and AP2 ES Volume 2, Hough to Walley's Green Community Area report (MA01)
Additional land temporarily required for modifications to the A534 Old Mill Road and Congleton Road junction AP2-001-003	MA01	SES2 and AP2 ES Volume 2, Hough to Walley's Green Community Area report (MA01)
Additional land temporarily required for modifications to the A54 St Michael's Way, A533 Leadsmithy Street and A54 Kinderton Street junction AP2-002-001	MA02	SES2 and AP2 ES Volume 2, Wimboldsley to Lostock Gralam Community Area report (MA02)
Additional land temporarily required for modifications to the A530 King Street, A530 Croxton Lane and B5309 King Street junction AP2-002-002	MA02	SES2 and AP2 ES Volume 2, Wimboldsley to Lostock Gralam Community Area report (MA02)

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AP2 ES amendment	Community area	Report where change is described
Additional land permanently required for modifications to the A559 Manchester Road, A559 Hall Lane and Station Road junction AP2-002-003	MA02	SES2 and AP2 ES Volume 2, Wimboldsley to Lostock Gralam Community Area report (MA02)
Additional land permanently required for modifications to DNO connections to A556 Shurlach Road auto-transformer station and Peacock Lane auto-transformer feeder station AP2-002-004	MA02	SES2 and AP2 ES Volume 2, Wimboldsley to Lostock Gralam Community Area report (MA02)
Additional land temporarily required for modifications to the A559 Manchester Road and Stubbs Lane junction AP2-002-005	MA02	SES2 and AP2 ES Volume 2, Wimboldsley to Lostock Gralam Community Area report (MA02)
Additional land temporarily required for modifications to the A556 Chester Road and A5033 Northwich Road junction AP2-003-001	MA03	SES2 and AP2 ES Volume 2, Pickmere to Agden and Hulseheath Community Area report (MA03)
Additional land permanently required for modifications to M6 junction 19 AP2-003-002	MA03	SES2 and AP2 ES Volume 2, Pickmere to Agden and Hulseheath Community Area report (MA03)
Additional land permanently required for the diversion of three high pressure gas pipelines near Millington Clough Ancient Woodland AP2-003-003	MA03	SES2 and AP2 ES Volume 2, Pickmere to Agden and Hulseheath Community Area report (MA03)
Additional land permanently required for modifications to M6 junction 20a AP2-003-004	MA03	SES2 and AP2 ES Volume 2, Pickmere to Agden and Hulseheath Community Area report (MA03)
Additional land temporarily required for construction access from Chapel Lane and the A556 temporary slip roads AP2-006-001	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required for the provision of a maintenance access road to the Chester Road satellite compound from the A556 AP2-006-002	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required to relocate Rostherne Mere groundwater recharge trenches north of Cherry Tree Lane AP2-006-003	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required for the installation of a temporary vehicle restraint system at M56 junction 8 AP2-006-004	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for modifications to the Yarwood Heath Farm accommodation overbridge AP2-006-005	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)

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AP2 ES amendment	Community area	Report where change is described
Additional land permanently required for a revised National Grid 400kV overhead power line diversion near Rycroft Covert Local Wildlife Site AP2-006-006	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Change in Bill powers for the retention and realignment of Footpath Ashley 3/1 AP2-006-007	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the realignment of a maintenance access road from Ashley Road AP2-006-008	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required for the provision of surface water drainage at Mobberley Road South satellite compound AP2-006-009	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for watercourse diversions at Mobberley Road AP2-006-010	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required for the operation of Ashley railhead near Sugar Brook Ancient Woodland AP2-006-011	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the revised realignment of Tributary of Birkin Brook 2 south of Thorns Green embankment AP2-006-012	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land required for the revised diversion of a Scottish Power 11kV overhead line, north of Brickhill Wood Ancient Woodland AP2-006-013	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required to reconfigure M56 Junction 6 AP2-006-014	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for modifications to the A538 Altrincham Road and Mobberley Road junction AP2-006-015	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the realignment of an 11kv underground power line diversion along Shay Lane AP2-006-016	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the provision of access to land parcels in the Manchester Airport High Speed station area AP2-006-017	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)

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AP2 ES amendment	Community area	Report where change is described
Additional land permanently required for modifications to mitigation for Timperley Brook AP2-006-018	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Change in Bill powers for the retention of Footpath Hale 16 from Brooks Drive to the Manchester Airport High Speed station AP2-006-019	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the provision of a replacement culvert at Brooks Drive AP2-006-020	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Change to Bill powers for construction traffic route along Enterprise Way AP2-006-021	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the extension of Metrolink provisions at Manchester Airport High Speed station AP2-006-022	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land permanently required for the modification of the Thorley Lane and Runger Lane junction AP2-006-023	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required at Manchester tunnel south portal main compound for provision of drainage outfall AP2-006-024	MA06	SES2 and AP2 ES Volume 2, Hulseheath to Manchester Airport Community Area report (MA06)
Additional land temporarily required for changes to permanent sewer connection from Manchester tunnel south portal AP2-007-001	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Change to Bill powers required for modifications to Manchester tunnel Altrincham Road vent shaft AP2-007-002	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Change to Bill powers required for relocation of vent shaft and headhouse from the B5167 Palatine Road to The Hollies AP2-007-003	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Change to Bill powers required for the modifications to the Wilmslow Road vent shaft headhouse AP2-007-004	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Change to Bill powers required for modifications to the Birchfield Road vent shaft headhouse AP2-007-005	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Additional land required for the diversion of Blackbrook Culvert AP2-007-006	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)

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AP2 ES amendment	Community area	Report where change is described
Change in Bill powers for modifications to size, height and layout of Manchester tunnel north portal headhouse AP2-007-007	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Additional land permanently required for changes to design elements managed by the Manchester tunnel north portal main compound AP2-007-008	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Additional land temporarily required for the reconfiguration of Ardwick construction sidings AP2-007-009	MA07	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Additional land permanently required for modifications to the A635/A665 Pin Mill Brow gyratory AP2-008-001	MA08	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Additional land permanently required for provision of an access ramp from the realigned B6469 Fairfield Street to the Network Rail upper viaduct deck at Manchester Piccadilly Station AP2-008-002	MA08	SES2 and AP2 ES Volume 2, Davenport Green to Ardwick Community Area report (MA07)
Change to Bill powers for modifications to the multi-modal transport hub AP2-008-003	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Additional land permanently required for a new loading/unloading bay to provide access to the catering areas within the Network Rail facilities building at Manchester Piccadilly High Speed station AP2-008-004	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Additional land permanently required for the reprovision of Blue Badge parking off the B6469 Fairfield Street AP2-008-005	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Change to Bill powers for the diversion of Travis Street sewer via Ducie Street with a new compound within Ducie Street and the A665 Great Ancoats Street junction AP2-008-006	MA08	SES2 and AP2 ES Volume 2, Manchester Piccadilly Station Community Area report (MA08)
Additional land permanently required for modifications to wastewater drainage at Annandale depot AP2-ORW-001	Off-route work	SES2 and AP2 ES Volume 4, Off-route effects
Additional land permanently required for utility diversions and modifications at Annandale depot AP2-ORW-002	Off-route work	SES2 and AP2 ES Volume 4, Off-route effects

3.3 Other amendments requiring change to Bill powers

- 3.3.1 Since the submission of the Bill and the AP1, the need for amendments to Part 4 of Schedule 5 ('Highways') and Schedule 18 of the Bill ('Listed buildings') have been identified.
- 3.3.2 Schedule 5 contains provisions for highways (Access, Interference, Construction and Maintenance). Table 3 in Part 4 of Schedule 5 specifies proposed creation of new public rights of way.
- 3.3.3 Table 4 summarises the amendment to column 2 of Table 3 of Schedule 5 upgrades the right of way proposed at AP1 to include a cycle track, including a right of way on foot. The provision of a cycle track, including a right of way on foot, was assessed within the SES1 and AP1 ES and therefore this amendment does not require any further assessment additional to that set out in the SES1 and AP1 ES with respect to any environmental topics (See the SES1 and AP1 ES, Volume 2, Community Area MA02, AP1-002-010) is required.

Table 4: Summary of amendments to column 2 of Table 3 in Part 4 of Schedule 5 of the Bill, as amended by AP1

Name of amendment	Community area	Description of the AP1 revised scheme	Description of the AP2 revised scheme
Change to Bill powers to upgrade proposed new footpath to cycle track, including a right of way on foot AP2-202-001	MA02	New footpath proposed between Restricted Byway Lostock Gralam 1/1 and Birches Lane	New cycle track, including a right of way on foot, between Restricted Byway Lostock Gralam 1/1 and Birches Lane

- 3.3.4 Schedule 18 contains provisions for the disapplication or modifications of controls relating to listed buildings. Buildings and structures included within Table 2 of Schedule 18 allow for buildings to be altered or extended for heritage or monitoring purposes. Buildings and structures included within Table 3 of Schedule 18 allow for buildings to be modified for noise mitigation works.
- 3.3.5 The amendments add certain listed buildings or structures to the tables in Schedule 18 as these assets were not included in the hybrid Bill as deposited. The inclusion of the buildings and structures listed in Table 5 was however considered in the preparation of the main ES. Therefore these amendments do not require any further assessment of the environmental effects or mitigation additional to that set out in the main ES with respect to any environmental topics (see Volume 2, Community Area reports of the main ES).
- 3.3.6 Table 5 identifies which buildings and structures have been added to which tables in Schedule 18 of the Bill and for what purpose.

Table 5: Summary of amendments to Schedule 18 of the Bill

Name of amendment	Community area	Description of the original scheme	Description of the AP2 revised scheme
Change to Bill powers to include Store Street Aqueduct, Manchester, within Table 2 of Schedule 18 of the Bill AP2-208-001	MA08	Structures were not included within Schedule 18 of the Bill	Provision of heritage and/or monitoring works on the Grade II* listed Store Street Aqueduct
Change to Bill powers to include the Former Goods Offices to Piccadilly Station, Manchester, within Table 2 of Schedule 18 of the Bill AP2-208-002	MA08		Provision of heritage and/or monitoring works on the Grade II listed Former Goods Offices to Piccadilly Station
Change to Bill powers to include Hollow Wood Farmhouse, Old Hall Lane, Tabley Superior, within Table 3 of Schedule 18 of the Bill AP2-203-001	MA03		Provision for noise mitigation works to the Grade II listed Hollow Wood Farmhouse, Old Hall Lane
Change to Bill powers to include Mere Covert Cottage, Dirty Lane, Rostherne, within Table 3 of Schedule 18 of the Bill AP2-206-001	MA06		Provision for noise mitigation works to the Grade II listed Mere Covert Cottage, Dirty Lane
Change to Bill powers to include Sycamore Cottage, Ashley Road, Ashley within Table 3 of Schedule 18 of the Bill AP2-206-002	MA06		Provision for noise mitigation works to the Grade II Sycamore Cottage, Ashley Road

4 Scope and methodology

4.1 Scope and methodology for the main ES and the SES1 and AP1 ES

- 4.1.1 The Environmental Impact Assessment (EIA) Scope and Methodology Report (SMR) (Volume 5, Appendix: CT-001-00001 in the main ES⁵) was published alongside the main ES in January 2022. It sets out the scope and methodology for the EIA of the scheme. The assessments presented in the main ES were undertaken in accordance with it.
- 4.1.2 As part of the SES1 and AP1 ES, updates were made to the methodology set out in the technical notes⁶ for air quality (Updated guidance on the assessment methodology for Phase 2b SES1 and AP1 ES (CT-001-00003)) and traffic and transport (Guidance on significance criteria for traffic and transport (CT-001-00004)).
- 4.1.3 Assessment of the impacts arising from the SES2 changes and AP2 amendments have been undertaken in accordance with the EIA SMR, subject to the methodology amendments in the SES1 and AP1 ES, and the methodology amendments in the SES2 and AP2 ES described below.

4.2 Scope and methodology for the SES2 and AP2 ES

Updates to scope and methodology

- 4.2.1 Assessment of the impacts and effects of the SES2 changes and AP2 amendments has been undertaken in accordance with the methodology outlined for each environmental topic in the EIA SMR, subject to the methodology amendments in the SES1 and AP1 ES, and the methodology amendments in the SES2 and AP2 ES described below.

⁵ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix: CT-001-00001. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

⁶ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement*. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

Air quality

- 4.2.2 Since the SES1 and AP1 ES, there has been an update to the methodology published as part of the SES1 and AP1 ES for the assessment of air quality⁷. The methodology has been revised to include the use of the Department for Environment, Food and Rural Affairs updated Emission Factors Toolkit to calculate emissions beyond 2030 and to include the Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019⁸ which update the air quality standard for particulate matter (PM_{2.5}). The methodology has also been updated to include the assessment of ammonia (NH₃) for protected sites, internationally designated sites and certain statutory designated sites with habitats sensitive to nitrogen. The updated methodology is provided in technical note SES2 and AP2 ES Volume 5, Appendix: CT-001-00003, Updated guidance on the assessment methodology for Phase 2b SES2 and AP2 ES.

Ecology and biodiversity

- 4.2.3 As described under air quality, the methodology has been updated for the assessment of emissions of ammonia (NH₃) and rates of acid deposition on protected sites, internationally designated sites and certain statutory designated sites with habitats sensitive to nitrogen arising from traffic flows. The ecological assessment in the SES2 and AP2 ES is based on this updated methodology.
- 4.2.4 Volume 5 of the main ES and SES1 and AP1 ES included reports which provided a draft assessment to inform a Habitats Regulations Assessment for a number of designated sites. Following Second Reading of the Bill, the content and purpose of the SES2 and AP2 ES Volume 5 reports has been revised. The SES2 and AP2 ES Volume 5 reports provide the background assessment for identifying any likely significant effects on designated sites to be reported under the EIA Regulations. Further and separate assessment will be carried out in line with Regulation 63 of the of the Conservation of Habitats and Species Regulations 2017.

Landscape and visual

- 4.2.5 The technical guidance note from the Landscape Institute on assessing landscape value outside national designations was issued in February 2021⁹. This new guidance has been reviewed and considered, however this new guidance does not change the overall

⁷ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Environmental Impact Assessment Scope and Methodology Report, Technical note – Updated guidance on the assessment methodology for Phase 2b SES1 and AP1 ES*, Volume 5, Appendix: CT-001-00003. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

⁸ *The Air Quality (Amendment of Domestic Regulations) (EU Exit) Regulations 2019*. London, Her Majesty's Stationery Office. Available online at: <https://www.legislation.gov.uk/uksi/2019/74/made>.

⁹ The Landscape Institute (2021), *Assessing landscape value outside national designations*. Available online at: <https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2021/05/tgn-02-21-assessing-landscape-value-outside-national-designations.pdf>.

methodology, approach or conclusions of significant effects reported for the landscape and visual assessment.

Major accidents and disasters

- 4.2.6 The main ES and the SES1 and AP1 ES were based on guidance set out in the Railways (Interoperability) Regulations 2011. The Railways (Interoperability) (Amendment) (EU Exit) Regulations 2019 (SI 2019/345)¹⁰ amends the Railways (Interoperability) Regulations 2011 and amends certain aspects of the interoperability regime that would no longer function correctly as a result of the UK's withdrawal from the EU. This updated legislation has been reviewed and considered, and this legislation does not change the overall methodology, approach or conclusions of significant effects reported for the major accidents and disasters assessment.

Traffic and transport

- 4.2.7 Since the SES1 and AP1 ES, there has been an update to the guidance published as part of the SES1 and AP1 ES for the assessment of traffic and transport¹¹. This has been updated for traffic delay to vehicle occupants in operation to include the number of users affected, aligning with the approach taken for assessment of traffic delay in construction. The updated methodology is provided in technical note SES2 and AP2 ES Volume 5, Appendix: CT-001-00004, Updated guidance on significance criteria for traffic and transport.
- 4.2.8 The peak level of construction traffic activity is expected to be 2031 and the opening year to be 2039. The extent and nature of changes to travel behaviour following COVID-19 are not yet clear and consequently are not reflected in the assessment. However, the impact of COVID-19 on economic growth is reflected in the HS2 travel forecasts. The August 2022 interim release of the DfT's National Travel forecasts (NTEM8) indicate that local travel forecasts used in the assessment generally reflect the impact of COVID-19 on economic growth, although longer term traffic forecasts for the Greater Manchester area show a reduction compared to those assessed. The impact of COVID-19 on travel behaviour is considered likely to result in lower travel demand in the medium term than the forecasts used in the assessment. Consequently, the assessment is considered to overstate travel demand for both construction and operation scenarios and therefore to present a robust case for traffic and transport.

¹⁰ *The Railways (Interoperability) (Amendment) (EU Exit) Regulations 2019 (SI 2019/345)*. London, Her Majesty's Stationery Office. Available online at: <https://www.legislation.gov.uk/ukxi/2019/345/contents>.

¹¹ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Environmental Impact Assessment Scope and Methodology Report, Technical note – Guidance on significance criteria for traffic and transport*, Volume 5, Appendix: CT-001-00004. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

Water resources and flood risk

- 4.2.9 Since the main ES and the SES1 and AP1 ES, there has been an update to the guidance published as part of the SES1 and AP1 ES for the assessment of water resources and flood risk¹². This has been revised to include the updated published climate change allowances and guidance on the application of the peak river flow and peak rainfall intensity allowances from the Environment Agency¹³. The updated methodology is provided in technical note SES2 and AP2 ES Volume 5, Appendix: CT-001-00005, Updated guidance on flood risk assessment.

Scoping

- 4.2.10 Prior to the assessment, a scoping exercise was used to determine whether the SES2 design changes and the AP2 amendments had the potential to result in any likely new, different or removed significant environmental effects, separately and in combination, compared with those reported in the main ES or the SES1 and AP1 ES.
- 4.2.11 Any SES2 design changes and AP2 amendments identified as having such potential were then subject to assessment, following the methodology outlined for each relevant environmental topic in the EIA SMR, as amended through updates to the methodology in the SES1 and AP1 ES and the updates described in the section above. Any new, different or removed significant effects arising from the changes and amendments are reported in the SES2 and AP2 ES Volume 2, Community Area reports.

Route-wide effects

- 4.2.12 Each SES2 design change and AP2 amendment has also been considered to determine its potential to give rise to any new, different or removed significant route-wide effects. Potential significant route-wide effects are reported in SES2 and AP2 ES Volume 3, Route-wide effects. The climate change, major accidents and natural disasters, and waste and material resources assessments are only reported at a route-wide level rather than in the SES2 and AP2 ES Volume 2, Community Area reports. This follows the approach taken in the main ES and the SES1 and AP1 ES. The scope of the SES2 and AP2 ES route-wide assessment is set out in SES2 and AP2 ES Volume 3, Route-wide effects.

¹² High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Environmental Impact Assessment Scope and Methodology Report, Technical note – Guidance on flood risk assessment*, Volume 5, Appendix: CT-001-00005. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

¹³ Environment Agency (2022), *Flood risk assessments: climate change allowances*. Available online at: <https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances>.

Off-route effects

- 4.2.13 SES2 design changes and AP2 amendments at locations beyond the route corridor between Crewe and Manchester have been considered to determine their potential to give rise to any new, different or removed significant off-route effects. The scope of the SES2 changes and AP2 amendments at off-route locations and their potential significant effects are reported in SES2 and AP2 ES Volume 4, Off-route effects.

Wider effects

- 4.2.14 The Wider effects report in Volume 5 of the main ES (Appendix: CT-006-00000)¹⁴ and the Wider effects report of the SES1 and AP1 ES (CT-006-00000)¹⁵ assessed whether the power to deviate within statutory limits altered the significance of the effects as reported elsewhere in the main ES and SES1 and AP1 ES.
- 4.2.15 Wider effects refer to any changes to the likely significant effects, reported in the SES2 and AP2 ES, that may result if the scheme as built deviates from the centre line of the works within the limits of deviation, as permitted under parliamentary powers. The SES2 and AP2 ES contain mapping within the Volume 2 and 5 Map Books, which show the HS2 route on the centre line for the permanent works.
- 4.2.16 The limits of deviation shown on the Parliamentary plans and sections, as amended by the SES2 design changes and AP2 amendments and described in the Bill, enable the AP2 revised scheme to deviate slightly from the centre line of the works as may be required for reasons of engineering practicability following detailed design.
- 4.2.17 The Wider effects report for the SES2 and AP2 ES assesses whether the power to deviate within these statutory limits would alter the significant predicted effects reported elsewhere in the SES2 and AP2 ES by creating new, different or removed significant effects (SES2 and AP2 ES Volume 5, Appendix: CT-006-00000, Wider effects report).

General assumptions and limitations

- 4.2.18 A precautionary approach is used to identify impacts and effects in instances where there is uncertainty or limited information.

¹⁴ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Wider effects report*, Volume 5, Appendix: CT-006-00000. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

¹⁵ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Supplementary Environmental Statement 1 and Additional Provision 1 Environmental Statement, Wider effects report*, Volume 5, Appendix: CT-006-00000. Available online at: <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-1-and-additional-provision-1-environmental-statement>.

- 4.2.19 Any assumptions and limitations that affect the assessment of significant environmental effects of the Proposed Scheme are described in the EIA SMR published as part of the main ES, and the relevant environmental topic sections within Volume 1, Volume 2, Volume 3 and Volume 4 of the main ES. Where amendments have been made to the assumptions and/or limitations they are reported in Volume 2, community area reports, Volume 3, Route-wide effects or Volume 4, Off-route effects of the SES2 and AP2 ES.

5 Approach to appendices in the SES2 and the AP2 ES

- 5.1.1 As with Volume 5 of the main ES and the SES1 and AP1 ES, Volume 5 of the SES2 and the AP2 ES contains supporting environmental information in the form of appendices.
- 5.1.2 Generally, the SES2 and the AP2 ES appendices update the corresponding appendices within the main ES and SES1 and AP1 ES where relevant, and should, therefore, be read in conjunction with them. The SES2 and AP2 ES appendices do not repeat information contained within the relevant main ES or SES1 and AP1 ES appendices if that information does not require updating as a result of the changes within the SES2 and the AP2 ES (e.g. policy framework, information on methodologies).
- 5.1.3 The Volume 5 appendices are generally structured as follows:
- Introduction;
 - Part 1: SES2;
 - new environmental baseline (where new environmental baseline information has been collated related to the design reported in the main ES or the SES1 and AP1 ES as relevant);
 - supporting data to the assessment of the SES2 design changes; and
 - Part 2: AP2 ES;
 - supporting data to the assessment of the AP2 amendments.
- 5.1.4 The appendices provide updated information where required for: agriculture, forestry and soils; air quality; climate change; ecology and biodiversity; electromagnetic interference; historic environment; land quality; landscape and visual; major accidents and disasters; socio-economics; sound, noise and vibration; town planning; traffic and transport; waste and material resources; and water resources and flood risk.
- 5.1.5 Certain additional reports and maps containing BID have been produced, which do not form part of the SES2 and AP2 ES. These documents are available online at <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-2-and-additional-provision-2-environmental-statement>. The BID documents and maps present background survey information and other relevant background material.

6 Approach to mapping in the SES2 and the AP2 ES

- 6.1.1 Construction (CT-05) and operation (CT-06) maps have been produced to indicate SES2 design changes and AP2 amendments. In each case, the relevant map from the main ES has been reproduced showing the original scheme and a second map produced showing the SES2 design changes and the AP2 amendments. Map sheets have only been produced where there is an SES2 design change or AP2 amendment.
- 6.1.2 The CT-05 and CT-06 maps also show SES1 design changes and AP1 amendments where they appear on the same map sheet as SES2 design changes or AP2 amendments. This is to illustrate locations where there may be design changes or amendments in proximity to one another and may result in interacting or combined effects.
- 6.1.3 On both the CT-05 and CT-06 SES2 and AP2 ES maps, SES2 design changes and AP2 amendments are indicated with a label that points to the location of the change(s). The label shows the change or amendment number together with a brief description. SES2 design change labels are purple, while AP2 amendment labels are red. SES1 design changes and AP1 amendments are also labelled, where relevant, with a grey box and the reference number.
- 6.1.4 The CT-05 maps use a colour code system for changes to land required for construction as a result of the AP2 revised scheme:
- additional land required for construction of the AP2 revised scheme is highlighted with a solid red outline and red hatch fill;
 - land no longer required for construction of the AP2 revised scheme is highlighted with a solid green outline and green hatch fill; and
 - where an AP2 amendment or SES2 design change covers a large area, the primary label may point to a red (AP2) or purple (SES2) extent indicator encompassing the change.
- 6.1.5 In addition the CT-05 maps show changes to land required for construction as a result of the AP1 revised scheme:
- additional land required for construction of the AP1 revised scheme is highlighted with a solid black outline and black dashed fill;
 - land no longer required for construction of the AP1 revised scheme is highlighted with a solid grey outline and grey dashed fill; and
 - where an AP1 amendment or SES1 design change covers a large area, the primary label may point to a grey extent indicator encompassing the change.
- 6.1.6 The CT-06 maps use a colour code system using boxes which highlight the extent of the change:
- SES2 design changes are highlighted with a purple extent indicator;
 - AP2 amendments are highlighted with a red extent indicator; and

- where relevant an AP1 amendment or SES1 may also be indicated on the CT-06 maps with a primary label and a grey extent indicator encompassing the change.
- 6.1.7 The relevant environmental maps in the Volume 2 and 5 map books have been produced where a new, different or removed likely residual significant environmental effect from those reported in the main ES or SES1 and AP1 ES (where relevant) is predicted to occur. Maps have also been produced when features, resources, receptors or viewpoints have been added or removed compared to the main ES or SES1 and AP1 ES.
- 6.1.8 Generally, three types of change are shown in the Volume 2 and Volume 5 SES2 and AP2 ES environmental maps, with the majority of maps using the following label styles to indicate significant effects:
- a removed or reduced effect shown by a label with green background;
 - an added or increased effect shown by a label with red background; or
 - a different effect shown by a label with grey background.
- 6.1.9 Changes to receptors or significant effects relating to the SES1 or AP1 ES are also provided for reference when they appear on an SES2 and AP2 ES environmental map. Where this is the case they are shown in a faded green box for a reduced or removed effect, faded red for an added or increased effect or faded grey for a different effect.
- 6.1.10 Where a map does not follow this label style convention, a legend is used for explaining the text boxes for SES2 and AP2 ES receptors or significant effects that are removed, added or different.
- 6.1.11 Additional environmental baseline and survey data that has become available since the main ES or SES1 and AP1 ES, as relevant, for ecology and biodiversity, traffic and transport and water resources and flood risk topics are also presented on the environmental maps, where relevant. These changes are indicated by an appropriate legend item.

7 Approach to mitigation and monitoring in the SES2 and AP2 ES

- 7.1.1 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017/571) (the English EIA Regulations 2017)¹⁶ require an ES to include “a description of any features of the proposed development, or measures envisaged in order to avoid, prevent or reduce and, if possible, offset likely significant adverse effects on the environment”. Such measures are described generally in the ES as mitigation measures. The Regulations require a description, where appropriate, of any proposed monitoring arrangements of significant adverse effects on the environment. This monitoring is for significant adverse effects associated with both the construction and operational phases of a scheme.
- 7.1.2 The same approach to mitigation and monitoring measures described in the main ES and the SES1 and AP1 ES applies to the effects set out in the SES2 and AP2 ES. This includes the draft Code of Construction Practice (CoCP) (see Volume 5, Appendix: CT-002-00000 in the main ES)¹⁷, which sets out measures to manage and control the effects of construction. The draft CoCP was submitted with the Bill.
- 7.1.3 The approach to mitigation and monitoring is also set out in Volume 1, Section 9 of the main ES. Any new, different or removed site-specific mitigation measures are described within Volume 2, Volume 3 and Volume 4 of the SES2 and AP2 ES where required.

¹⁶ *The Town and Country Planning (Environmental Impact Assessment) Regulations 2017*. SI 2017 No. 571, Her Majesty's Stationery Office, London. Available online at: http://www.legislation.gov.uk/uksi/2017/571/pdfs/ukxi_20170571_en.pdf.

¹⁷ High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Draft Code of Construction Practice*, Volume 5, Appendix: CT-002-00000. Available online at: <https://www.gov.uk/government/collections/hs2-phase2b-crewe-manchester-environmental-statement>.

8 Consultation on the SES2 and the AP2 ES

- 8.1.1 A formal public consultation is required by Parliament on both the SES2 and the AP2 ES. Members of the public will have a period of at least 42 days (six weeks) to respond to the consultation following deposit of the SES2 and AP2 ES in Parliament and the first publication of the necessary newspaper notices that follow.
- 8.1.2 Parliamentary officials will appoint an independent assessor who will summarise the issues raised by members of the public and provide a report to Parliament before the Third Reading of the Bill.
- 8.1.3 The SES2 and AP2 ES and details of how to respond to the consultation can be viewed at <https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-supplementary-environmental-statement-2-and-additional-provision-2-environmental-statement>.
- 8.1.4 There will also be a separate petitioning period in relation to AP2. Within this period, persons whose property or interests are specially and directly affected by the amendments to the Bill for which powers are sought under the AP2 have the right to petition against AP2.
- 8.1.5 More information on who may petition against AP2, and how to do so, is available on Parliament's website (www.parliament.uk).

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