

Preliminary Environmental Information Report - Supplementary Information Report



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1. Introduction

1.1 Overview

1.1.1 The Proposed Development

1.1.1.1 Rampion Extension Development Limited (hereafter referred to as 'RED') ('the Applicant') is developing the Rampion 2 Offshore Wind Farm Project (Rampion 2) located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel in the south of England.

1.1.1.2 This **Preliminary Environmental Information Report - Supplementary Information Report (PEIR SIR)** should be read in conjunction with the original **Preliminary Environmental Information Report (PEIR)** published in July 2021 (RED, 2021).

1.1.1.3 Rampion 2 comprises of both onshore and offshore infrastructure associated with the proposed offshore wind farm including:

- 90 offshore wind turbine generators (WTGs) and associated foundations;
- inter-array cables connecting the WTGs to up to three offshore substations;
- up to four offshore export cables will be buried under the seabed within the final cable corridor;
- a single landfall site connecting offshore and onshore cables using Horizontal Directional Drilling (HDD) installation techniques;
- buried onshore cables in a single corridor for the maximum route length of up to 40.25 km using:
 - ▶ trenching and backfilling installation techniques; and
 - ▶ trenchless and open cut crossings.
- a new onshore substation that will connect to the existing National Grid substation at Bolney, Mid Sussex.

1.1.1.4 A full description of the Proposed Development is provided in **Chapter 4: The Proposed Development, Volume 2 of the PEIR**. The original PEIR Assessment Boundary used to inform the PEIR is shown in **Figure 1.1, Volume 3 of the PEIR**.

1.1.1.5 Since the publication of the **PEIR**, alternatives and modifications have been identified for the onshore part of the original PEIR Assessment Boundary. These have been generated as a result of:

- further design evolution which has been informed by statutory consultation;
- having regard to stakeholder and landowner feedback, and
- further engineering considerations and environmental assessment information that has arisen since the publication of the **PEIR**.

- 1.1.1.6 As described in the **PEIR**, the current description of the Proposed Development is indicative, and a design envelope approach has been adopted to identify key design assumptions. This enables the environmental assessment to be carried out whilst retaining enough flexibility to accommodate refinement during detailed design.

1.2 Preliminary Environmental Information Supplementary Information Report (PEIR SIR)

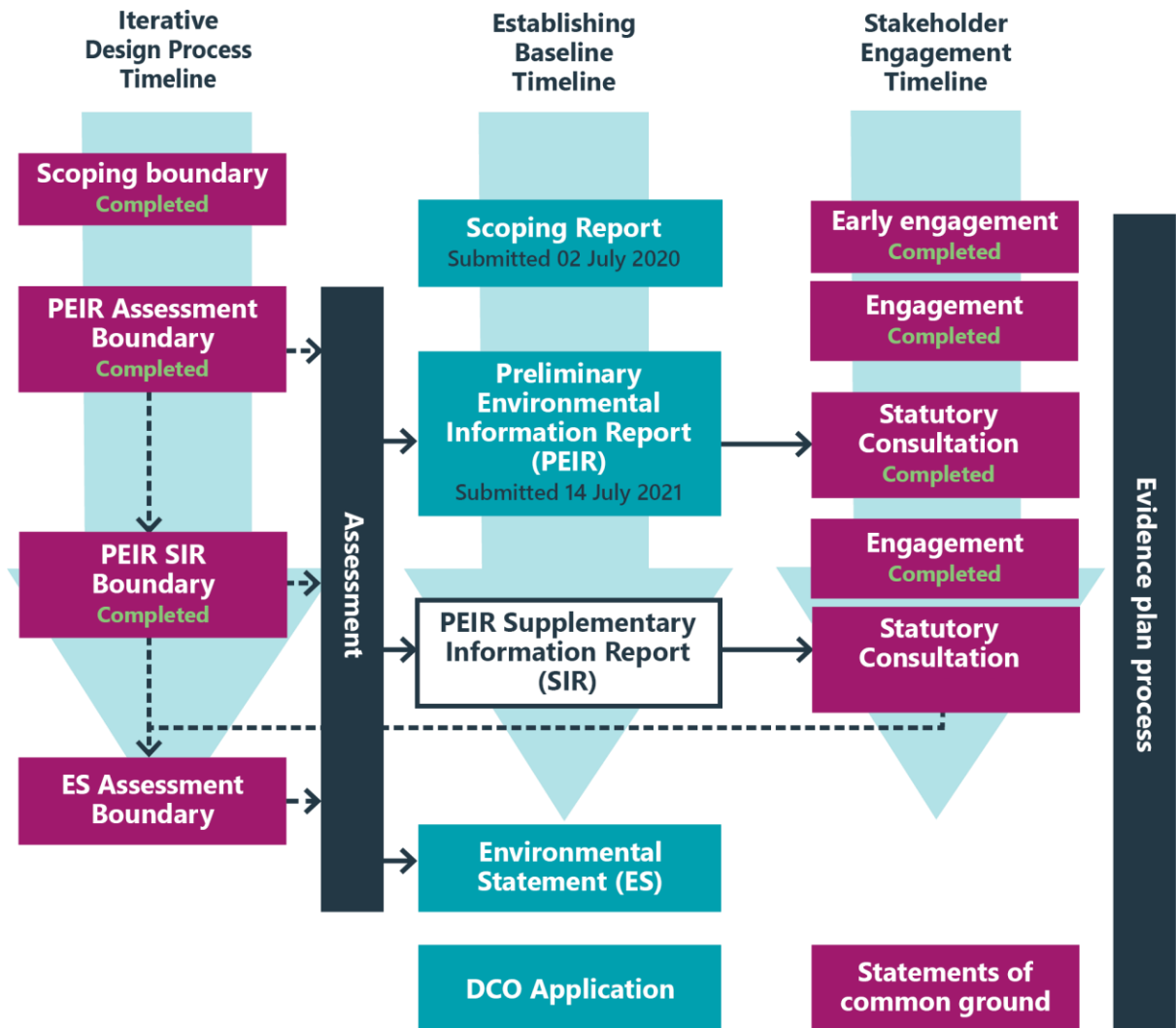
- 1.2.1.1 In July 2021, RED published the PEIR in line with the requirements of Regulation 12 of the *Infrastructure Planning (Environmental Impact Assessment) Regulations 2017* (hereafter referred to as the 'EIA Regulations 2017'). The EIA Regulations 2017 requires the Applicant to consult on 'preliminary environmental information' (where the proposed development is 'EIA development'), which is information that is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development). The **PEIR** therefore set out the preliminary environmental information and assessment findings of the EIA based on the available information at the time of publication.
- 1.2.1.2 The original **PEIR** was published as part of the Rampion 2 Statutory Consultation, which was held from 14 July 2022 to 16 September 2021, for a period of nine weeks. Following feedback to the Statutory Consultation in 2021 and after further analysis, it was identified that some coastal residents did not receive consultation leaflets as intended. Therefore, the Statutory Consultation was reopened between 7 February 2022 to 11 April 2022 for a further nine weeks. The original **PEIR** published as part of the Statutory Consultation in 2021 was unchanged and re-provided alongside the reopened Statutory Consultation in early 2022.
- 1.2.1.3 This PEIR SIR has been prepared to inform a second Statutory Consultation exercise, and provides supplementary environmental information associated with new alternatives and modifications to the Rampion 2 onshore part of the original PEIR Assessment Boundary (**Graphic 1-1** illustrates where in the EIA process this PEIR SIR sits). These design iterations have been generated as a result of stakeholder consultation, including the Statutory Consultation described below, and engagement with landowners, further engineering and environmental studies which have taken place since the publication of the **PEIR** in July 2021.
- 1.2.1.4 The Rampion 2 iterative environmental design process is a fundamental element of the EIA, as promoted by Guidance¹, and has allowed opportunities for stakeholders to provide feedback and to understand and influence the design as it progresses. As such, the design of the Proposed Development has had regard to the consultation responses from the first Statutory Consultation period in 2021 and further information generated following the publication of the **PEIR**. Each request for design change has been analysed from an inter-disciplinary perspective to evaluate the benefit of introducing an iteration to the original designs. This process

¹ Department for Communities and Local Government (2015). Planning Act 2008: Guidance on the pre-application process, para 70-71. (online) Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418009/150326_Pre-Application_Guidance.pdf (Accessed October 2022).

has resulted in the onshore part of the PEIR Assessment Boundary being updated, with alternatives and modifications identified for assessment and presented within this PEIR SIR. From the outset, the environment has been central to the design of Rampion 2, and this is demonstrated further through the development of the Commitments Register initially presented in the Scoping Report and updated in the **PEIR**. This register identifies commitments that have been made and embedded into the Rampion 2 design and has also been updated in part for this PEIR SIR, further details are provided in **Appendix F**.

- 1.2.1.5 This PEIR SIR therefore is provided to inform feedback from stakeholders on the new alternatives and modifications to the onshore design of Rampion 2. This feedback will enable final refinements to be made to the onshore design of the Proposed Development to achieve a single onshore cable route and associated infrastructure, and as such not all alternatives and modifications presented in this report will be adopted and then assessed in the forthcoming Environmental Statement (ES). Refined Development Consent Order Limits, including a final set of associated accesses and temporary construction compounds will be presented as the final plans in the application for development consent and accompanying ES.

Graphic 1-1 EIA Process for Rampion 2



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1.3 Alternatives and modifications to the onshore part of the original PEIR Assessment Boundary

1.3.1.1 Alternative cable routes, modified routes, trenchless crossings and alternative accesses form the new alternatives and modifications which are the subject of this PEIR SIR, and which have been generated as a result of consultation, engagement and further engineering and environmental studies undertaken. These design iterations may in turn affect areas or receptors beyond those considered within the original PEIR (RED, 2021) and have been split into:

- Longer Alternative Cable Routes (LACRs);
- Alternative Cable Routes (ACRs);
- Modified Routes (MRs);
- Alternative Access (AAs); and
- Trenchless Crossings (TCs).

- 1.3.1.2 The proposed alternatives and modifications considered as part of this PEIR SIR are detailed in **Sections 2, 3, 4, 5** and **6** comprise the following:
- Two Longer Alternative Cable Routes (LACRs) areas: LACR-01 – LACR-02:
 - ▶ These are areas that deviate geographically from the onshore part of the original PEIR Assessment Boundary, to enable an alternative onshore cable corridor option to be considered by RED and are over 5km in length.
 - ▶ In line with the descriptions provided within the **Consultation Booklet**, LACR-01 is subdivided into LACR-01a, LACR-01b and LACR-01c. A high-level environmental review is then provided per environmental aspect for each section of LACR-01 (LACR-01a, LACR-01b and LACR-01c).
 - ▶ In line with the descriptions provided in the **Consultation Booklet**, LACR-02 is identified separately and a high-level environmental review is then provided per environmental aspect.
 - ▶ The LACRs are described in **Table 2-1** within **Section 2.1** of this PEIR SIR. For each LACR, the consideration of each environmental aspect is presented in **Sections 2.3** to **2.4**. The locations of the two LACRs are shown in **Figures 32** to **48, Appendix A**. The environmental constraints for each LACR are presented in **Appendix C**.
 - Seven Alternative Cable Routes (ACRs) areas (ACR-01 – ACR-07):
 - ▶ These are areas that deviate geographically from the onshore part of the original PEIR Assessment Boundary, to enable an alternative onshore cable corridor option to be considered by RED and are all under 5km in length.
 - ▶ The ACRs are described in **Table 3-1** within **Section 3.1** of this PEIR SIR. For each ACR, the consideration of each environmental aspect is presented in **Sections 3.2** to **3.9**. The locations of the seven ACRs are shown in **Figures 6** to **24, Appendix A**. The environmental constraints for each ACR are presented in **Appendix B**.
 - 14 Modified Routes (MRs) (MR-01 – MR-14):
 - ▶ The MRs constitute the inclusion of new areas directly adjacent to the onshore part of the original PEIR Assessment Boundary. These are being proposed to facilitate flexibility in the design of the onshore cable corridor at specific locations in order to accommodate cable realignments, or widened working areas (i.e., for laying out equipment) or soil storage.
 - ▶ The MRs are described in **Table 4-1** within **Section 4.1**. A summary of considerations for each environment aspect across all MRs is provided in **Section 4.2**. Supporting details are provided in **Table D1, Appendix D**. The location of the 14 MRs are shown on **Figures 2** to **29** in **Appendix A**. The environmental constraints for each MR are presented in **Appendix B**.
 - 33 additional or amended Trenchless Crossings (TCs) (TC-01 – TC-33):
 - ▶ As part of the onshore cable corridor, trenchless crossing methods will be used under specific constraints that have been identified as impossible to cross, or particularly sensitive to using open trenched construction

techniques (e.g., main watercourses, railways, roads that form part of the Strategic Highways Network and other identified constraints). This means that the cable duct is drilled or bored under the crossing and is therefore less intrusive from a crossing interaction, traffic management and environmental perspective.

- ▶ Some additional TCs are proposed, whilst others are amended from the original PEIR, as set out in the crossing schedule **Appendix 4.2, Volume 4** of the **PEIR**.
- ▶ The additional or amended trenchless crossings are described in **Table 5-1** within **Section 5.1**. The location of the TCs is shown on **Figures 6 to 48** in **Appendix A**. The environmental constraints for each TC are presented in **Appendix B**.
- ▶ Some additional or amended trenchless crossings are included as part of LACRs, ACRs or MRs as described above and there are assessed in **Section 2, Section 3** and **Section 4** respectively.
- ▶ Where a TC is included in isolation, these are described in **Section 5.2** along with a summary of environmental considerations. Further supporting details are provided in **Appendix D**.
- 32 additional temporary construction and/or permanent accesses (AA-01 – AA-32):
 - ▶ As part of the iterative design process, some additional temporary construction and/or permanent accesses are proposed. Their location is shown on **Figures 4 to 48** in **Appendix A**. The environmental constraints for each AA are presented in **Appendix B**.
 - ▶ Some AAs are included as part of LACRs, ACRs or MRs as described above and in **Section 2, Section 3** and **Section 4** respectively.
 - ▶ Where an AA is included in isolation, these are described in **Section 6.2** along with a summary of environmental considerations. Further supporting details are provided in **Appendix E**.

1.3.1.3 At the previous Statutory Consultation, RED presented two options for the onshore substation to connect the onshore cable route to the national electricity network. In July 2022, RED announced that their preferred site was in the Bolney Road/Kent Street area, now referred to as 'Oakendene'. Since the previous Statutory Consultation, RED have also now committed to a maximum of 90 offshore wind turbine generators (WTGs), with the number of WTGs having previously not exceeded the number of WTGs of the existing Rampion 1 project. These decisions were made as a result of a combination of statutory consultation feedback received on the **PEIR** from local community members, statutory bodies and others.

1.3.1.4 This PEIR SIR has been prepared to inform a second Statutory Consultation exercise, and provides supplementary environmental information associated with new alternatives and modifications to the Rampion 2 onshore part of the original PEIR Assessment Boundary. Therefore, the assessment of the removal of Wineham Lane onshore substation site and the reduced number of WTGs have not been included within this PEIR SIR. This Statutory Consultation focuses only

on potential new areas to those presented in the original PEIR that may be affected by the alternatives and modifications in this PEIR SIR.

- 1.3.1.5 The discounted onshore substation site at Wineham Lane North has been duly removed from PEIR SIR plans presented in **Appendix A**.

1.4 PEIR SIR Approach

1.4.1 Overview

- 1.4.1.1 The PEIR SIR seeks to be a shorter document which cross-references the **PEIR** where relevant to provide additional context. For in-depth information on **PEIR** stage assessments and for understanding the full set of likely significant effects, the July 2021 PEIR documents are accessible on the Rampion 2 website².
- 1.4.1.2 As with the PEIR, the PEIR SIR assesses the maximum design scenario. It treats the new alternatives and modifications as potential additions to the PEIR Assessment Boundary without taking account of any future refinement once options have been selected to inform the final design and DCO Order Limits.
- 1.4.1.3 The PEIR SIR presents an environmental review of the alternatives and modifications which has been informed by a desk-based review of publicly available information, mapping and documents alongside environmental information previously collated for the original PEIR. Details regarding the existing evidence base are provided in **Chapters 6 to 28 of the PEIR** for each of the relevant individual environmental aspects. The evidence base has, and will continue to be, regularly discussed with relevant stakeholders to ensure that it is appropriate.
- 1.4.1.4 There have also been no focused additional environmental surveys undertaken since the PEIR for the ACRs, MRs, AA, and TC areas to inform this PEIR SIR. However, where available and applicable, existing survey results from the ongoing surveys within the original PEIR Assessment Boundary have been utilised to inform this PEIR SIR. This is considered to be sufficient to inform robust and reliable environmental review of the outcomes and conclusions presented in this PEIR SIR either because the survey has resulted in data capture from the wider area, or the survey area is highly representative of the wider area. Additional environmental surveys are ongoing and results will be presented in the ES as appropriate and in line with the ES Assessment Boundary.
- 1.4.1.5 Due to the larger geographical deviation of LACR-01 (including LACR-01a, LACR-01b and LACR-01c) and LACR-02 from the original PEIR Assessment Boundary, further information has been required for a number of environmental aspects to help inform the PEIR SIR. This is discussed where relevant in **Section 2** and presented in the form of appendices (**Appendices H-M**). Future surveys will be undertaken and presented on the alternatives and modifications relevant to the ES Assessment Boundary.

² Available at: <https://rampion2.com/formal-consultation-detailed-documents/> (Accessed: 12 October 2022)

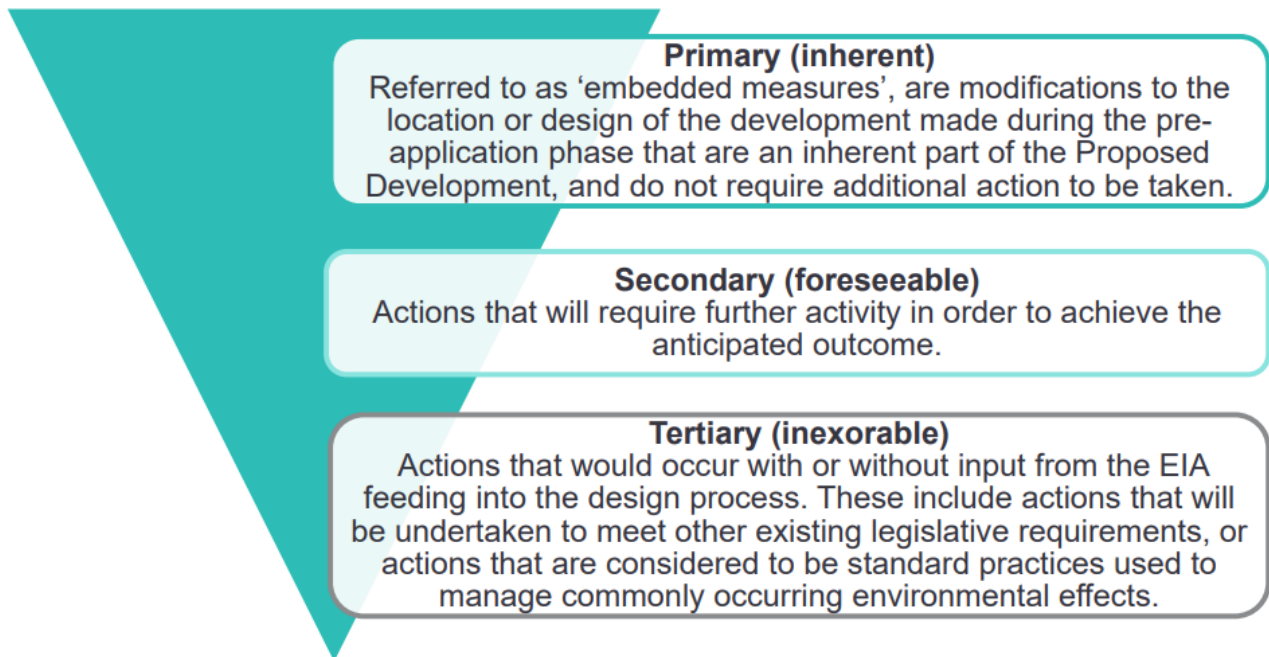
- 1.4.1.6 The supplementary environmental review does not constitute a full assessment of effects. It determines whether the environmental receptors, the magnitude of change, and/or resulting assessment outcomes presented in the **PEIR** have changed as a result of the alternatives and modifications presented to the onshore part of the original PEIR Assessment Boundary. It also considers whether these changes are likely to give rise to new or different residual significant effects. The outcomes of the Statutory Consultation and this further consultation will help inform the ES Assessment Boundary. A full assessment of the Proposed Development will be presented at the ES stage which will include a cumulative assessment. **Appendix G** presents the summary of residual effects from the original PEIR (RED, 2021) onshore aspect chapters for ease of reference.
- 1.4.1.7 The environmental review presented in this PEIR SIR has been undertaken in accordance with the assessment methodology set out in **Chapter 5: Approach to the EIA** of the **PEIR**. Further detailed assessment criteria applicable to specific environmental aspects are detailed within aspect chapters (**Chapters 6 to 28**) of the **PEIR** (RED, 2021). The basis on which survey data has informed the PEIR SIR has been set out and described in **Paragraph 1.4.1.4**.
- 1.4.1.8 As the alternatives and modifications presented in the PEIR SIR are focused on the onshore cable corridor, the environmental review has been carried out for onshore and crosscutting environmental aspects only as follows:
- Socio-economics;
 - Landscape and visual impact;
 - Air quality;
 - Soils and agriculture;
 - Noise and vibration (onshore);
 - Terrestrial ecology and nature conservation;
 - Transport;
 - Ground conditions;
 - Historic environment;
 - Water environment;
 - Major accidents and disasters; and
 - Greenhouse gas assessment.
- 1.4.1.9 Descriptions of the alternatives and modifications being considered as part of this environmental review are provided in this PEIR SIR. The description of the Proposed Development presented in **Chapter 4, Volume 2** of the **PEIR** will be updated in the ES to reflect where any alternatives or modifications considered in this PEIR SIR are taken forward as part of the design at the Application stage. The relevant sections of these chapters and associated figures (**Volume 3**) will be updated to reflect the design of the Proposed Development for the Application and presented in the ES.

1.4.1.10 The assessment outcomes of the offshore environmental aspects presented in **Chapters 6 to 17, Volume 2** of the **PEIR** or associated design updates are not covered in this PEIR SIR.

1.4.2 Embedded environmental measures

- 1.4.2.1 EIA is an iterative process and opportunities for mitigation, referred to as ‘embedded environmental measures’, have been considered throughout the design development of Rampion 2. They have also been considered in the assessment undertaken for the original PEIR, and the supplementary environmental review undertaken for the PEIR SIR, where likely significant effects have been identified. Where possible, these measures have been developed with input from key stakeholders, together with appropriate technical standards, policies and guidance.
- 1.4.2.2 These embedded environmental measures include avoidance, best practice and design commitments, which are classified into primary, secondary or tertiary measures in accordance with the IEMA ‘Delivering Quality Development’ (2016) definitions and as set out in **Graphic 1-2**. Good practice consideration and application of environmental measures involves a hierarchal approach, considering avoidance of negative effects as the primary objective.
- 1.4.2.3 In the context of the original PEIR, this PEIR SIR, and the ES that will follow, embedded environmental measures (presented in **Appendix F**) incorporate all of the types of measure as set out in **Graphic 1-2**. The iterative design evolution process followed has been driven by collaborative working between the design, environmental and land interests teams, and in consultation with key stakeholders. This may have been through the consideration of alternatives, or through measures incorporated within the design itself.
- 1.4.2.4 These embedded environmental measures have informed the review for each aspect and are included in the Commitments Register outlined in the **PEIR (Commitments Register, Appendix 4.1, Volume 4 in the PEIR (RED, 2021))** presented in **Appendix F, Table F2** for ease of reference. The Commitments Register is used as the primary tool to capture and agree all embedded environmental measures and the mechanism for securing them. As the intention is to implement all measures as part of the Rampion 2 design, the preliminary assessment of likely significant effects is based on this assumption.
- 1.4.2.5 Due to the progress of the design since the original PEIR, some embedded environmental measures have been updated or newly created in relation to the alternatives and modifications, which are the subject of this Statutory Consultation. These are included within this consultation and are presented in **Appendix F, Table F1** and are referred to where appropriate.
- 1.4.2.6 Following this Statutory Consultation, a full and updated list of embedded environmental measures, including how they will be secured, will be included in the ES.

Graphic 1-2 Embedded environmental measures



1.4.3 Approach to the environmental review of alternatives and modifications

- 1.4.3.1 The supplementary environmental review of onshore environmental receptors associated with the LACRs, ACRs, MRs, TCs and AAs are summarised in **Appendix C, D and E**. Due to the size and extent of the proposed LACRs and ACRs, the environmental review and supporting narrative for each:
- LACR (LACR-01 – LACR-02) is provided per environmental aspect in **Sections 2.2 – 2.4**; and
 - ACR (ACR-01 – ACR-07) is provided per environmental aspect in **Sections 3.2 – 3.9**.
- 1.4.3.2 As MRs, TCs and AAs are smaller in size and extent, summaries are then provided per environmental aspects within the following relevant sections:
- MRs (**Section 4.2**);
 - TCs (**Section 5.2**); and
 - AAs (**Section 6.2**).
- 1.4.3.3 **Section 7** provides an overall summary of the environmental review for each relevant onshore aspect when considering all of the alternatives and modifications together.
- 1.4.3.4 The environmental review has been carried out using the key shown in **Table 1-1**.

Table 1-1 Key to the supplementary environmental review presented in Appendices C-E

Green Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there is <u>no change</u> to overall assessment outcomes and/or conclusions presented in the PEIR (RED 2021).</p> <p>Text is provided to clarify where appropriate, including notable changes to environmental receptors since PEIR where relevant.</p>
Orange Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a <u>potential increase</u> in the overall assessment of significance presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>
White Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a <u>potential reduction</u> in the overall assessment of effects presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>

1.5 Report structure

1.5.1.1 The full PEIR SIR is structured as follows:

- **Section 1:** Introduction;
- **Section 2:** Longer Alternative Cable Routes;
- **Section 3:** Alternative Cable Routes;
- **Section 4:** Modified Routes;
- **Section 5:** Trenchless Crossings;
- **Section 6:** Alternative temporary construction and permanent accesses;
- **Section 7:** Environmental considerations – all alternative and modified areas;
- **Section 8:** Summary;
- **Section 9:** Glossary and abbreviations;
- **Section 10:** References;
- **Appendix A:** Figures (SIR Plans);
- **Appendix B:** Statutory and non-statutory environmental designations and other key environmental features;

- **Appendix C:** Review summary for LACRs and ACRs
- **Appendix D:** Review summary for Modified Routes and Trenchless Crossings;
- **Appendix E:** Review summary for alternative temporary and construction accesses;
- **Appendix F:** Commitments Register;
- **Appendix G:** Summary of residual effects tables;
- **Appendix H:** Landscape and visual impact assessment;
- **Appendix I:** Terrestrial ecology and nature conservation;
- **Appendix J:** Transport;
- **Appendix K:** Historic environment;
- **Appendix L:** Water environment; and
- **Appendix M:** Socio-economics.

2. Longer Alternative Cable Routes LACR-01 and LACR-02

2.1 Descriptions of LACR-01 and LACR-02

- 2.1.1.1 As outlined in **Section 1.3**, two Longer Alternative Cable Routes (LACRs) have been identified for consideration which deviate geographically from the onshore part of the original PEIR Assessment Boundary. This is to enable an alternative onshore cable corridor option to be considered by RED. Therefore, LACR-01 and LACR-02 are outlined separately within this Section of the PEIR SIR.
- 2.1.1.2 LACR-01 and LACR-02 have arisen as a result of a combination of statutory consultation feedback received on the **PEIR** from local community members, statutory bodies and others. Feedback has also been considered from ongoing stakeholder and landowner engagement. LACR-01 and LACR-02 have also been considered and have had regard to the outcomes of further surveys and engineering design investigations undertaken since the PEIR was published (e.g., geophysical surveys in areas of archaeological potential within the original PEIR Assessment Boundary). These inputs have been analysed and have contributed to the design change process.
- 2.1.1.3 As outlined in **Section 1.3**, in line with the descriptions provided within the **Consultation Booklet**, LACR-01 is subdivided into LACR-01a, LACR-01b and LACR-01c, LACR-02 is identified separately. An environmental review is then provided per environmental aspect for each section of LACR-01 (LACR-01a, LACR-01b and LACR-01c) and for LACR-02. Where further information has been required to inform the environmental review, this is provided in relevant **Appendices H-M**.
- 2.1.1.4 The locations of the LACR-01 (including LACR-01a, LACR-01b and LACR-01c) and LACR-02 are shown in **Figures 32 to 48, Appendix A**.
- 2.1.1.5 The statutory and non-statutory environmental features relevant to each LACR are presented in **Appendix B**, with figures per LACR-01 and LACR-02 to present the various environmental features.

Table 2-1 Description of LACR-01 and LACR-02

ID	Description
LACR-01a (Figure 32-37, Appendix A)	LACR-01a commences approximately 150m north of Littlehampton and running to the south of Lyminster, to the east of the original PEIR Assessment Boundary. The route avoids commercial agricultural interests, potential archaeological constraints, and an agri-environmental scheme.

ID	Description
	<p>LACR-01a overlaps with an additional temporary construction access (AA-04) from the A284 within the LACR-01a area. AA-04 is located within the footprint of LACR-01a, however these additions/modifications are exclusive of each other. AA-04 will only be taken forward as a standalone temporary construction access if LACR-01a is not progressed.</p>
	<p>LACR-01a overlaps and is located within the same footprint with ACR-02 from where the two areas commence approximately 150m north of Littlehampton to south of the A27, where LACR-01a continues east. The two alternatives are assessed separately, see Section 3.4 for ACR-02.</p>
	<p>LACR-01a runs east between Lyminster and the Black Ditch for 850m through agricultural land with temporary construction and permanent access from A284 (Lyminster Road), requiring new bellmouths on both sides of the road.</p>
	<p>LACR-01a continues 550m east through agricultural land, south of Lyminster, and includes a trenchless crossing of the A284 (TC-03) and a trenchless crossing of the proposed Lyminster Bypass (TC-04), which is a separate West Sussex County Council project expected to be complete prior to the construction of Rampion 2. Temporary construction and permanent access will be provided directly from the Lyminster Bypass to the east and west, located within the LACR-01a boundary.</p>
	<p>AA-05 provides permanent access to LACR-01a from the A284 Lyminster Road and runs along an existing track. From the Lyminster Bypass, LACR-01a continues 650m east following the field boundaries and then turns north remaining close to field boundaries before turning east for approximately 950m through agricultural fields to cross Poling Street (open cut). Two permanent accesses will be located on either side of Poling Street and will utilise existing field entry points. These are located within the LACR-01a boundary.</p>
	<p>LACR-01a continues approximately 1.8km to the east to the A27. This section includes two trenchless crossings of a tree line and ditch (TC22), and Decoy Lane (TC-23). In addition to the access from the new Lyminster Bypass, temporary construction access for this section (AA-16) is provided off the A27 through the Vinery Industrial Estate with permanent access (AA-17) from the same point but running east of Lillian Terrace. Temporary construction and operational access (AA18) for the Decoy Lane crossing is provided from the A27 utilising an existing bellmouth, which may require upgrading, and along Decoy Lane. A trenchless crossing (TC-24) of the A27 (Arundel Road) is then required located approximately 300m west of Hammerpot.</p>

ID	Description
	<p>North of the A27, LACR-01a continues for approximately 350m east to a trenchless crossing (TC-25) of mature tree line north of Hammerpot. Temporary construction vehicles requiring onward access will require passing through the tree line. LACR-01a turns generally north and runs for 2.3km across agricultural fields and avoiding areas of Ancient Woodland. Entry to the construction strip north of the A27 is proposed via Arundel Road at Hammerpot. An exit from the temporary construction strip back on to the A27 is proposed at the junction with Angmering Park. Both temporary construction entry and exit accesses are within the main LACR-01a boundary. Permanent access (AA-20) will be from Swillage Lane utilising existing access tracks.</p> <p>LACR-01a then requires the use of a trenchless crossing techniques (TC-26) to proceed down the steep, wooded slopes above Michelgrove. This will include a trenchless crossing to reach an existing clearance within the wooded area approximately 350m to the north with access utilising existing tracks. Light temporary construction access to this point (e.g., for personnel reaching site) and permanent access is shown in AA-29. From here, a second trenchless crossing will be used to traverse down the steep slope and woodland 350m north-east towards Michelgrove. The PEIR Assessment Boundary here has been widened to provide room for alternative crossing routes here due to the unknown ground conditions including potential for karst (geological) features.</p> <p>Temporary construction and permanent access (AA-21) to the base of this crossing will be from Michelgrove Lane along approximately 500m of upgraded estate track.</p>
<p>LACR-01b (Figure 38-39, Appendix A)</p>	<p>LACR-01b continues from LACR-01a and heads north-west and then north-east through agricultural fields (including a long term, extensive, higher tier Countryside Stewardship scheme called the Peppering Project) for approximately 3.1km around Harrow Hill and following an existing estate track. The route re-joins the original PEIR Assessment Boundary approximately 1.2km south-west of the summit of Sullington Hill. An additional temporary construction and permanent access (AA-22) running north along Michelgrove Lane will also be required and additional passing places will need to be constructed.</p>
<p>LACR-01c (Figure 40-43, Appendix A)</p>	<p>LACR-01c continues from LACR-01a and heads approximately 750m north and east through agricultural land and an open cut crossing of Michelgrove Lane. LACR-01c then continues approximately 1km north-east to a trenchless crossing (TC-27) up onto the shoulder of Blackpatch Hill. A second trenchless crossing (TC-28) is required down the steep east side of Blackpatch Hill. Temporary construction</p>

ID	Description
	<p>and permanent access (AA-24) to this section will be off Long Furlong Lane utilising the existing track where possible. Allowance has been made within the PEIR Assessment Boundary for access along the field boundary parallel to the existing track if the existing track is unsuitable.</p> <p>From the eastern base of Blackpatch Hill, LACR-01c heads north and runs approximately 2.6km through agricultural land, parallel to wooded areas and between buildings and a gallops. Temporary construction and permanent access (AA-25) will be provided off Long Furlong. The existing bellmouth will be upgraded and an approximately 900m long access track will lead to the onshore cable construction corridor, with a combination of upgrades to the existing tracks and sections of new track. Provision has been made in the PEIR Assessment Boundary to create an access track along field boundaries parallel to the existing track if the existing track is unsuitable. An additional permanent access (AA-26) will also be provided from the A24 (Horsham Road) which will utilise approximately 2km of existing tracks running west from the A24, there will also be a section running for approximately 1.8km north to Sullington Hill/Barnsfarm Hill for this permanent access. A short section of permanent access (AA-27) utilising an existing track between fields will also be required.</p> <p>A trenchless crossing (TC-29) is required at the slope down Sullington Hill/Barnsfarm Hill for approximately 400m in length. LACR-01c re-joins the original PEIR Assessment Boundary at this point.</p>
<p>LACR-02 (Figure 44-48, Appendix A)</p>	<p>LACR-02 commences at the original PEIR Assessment Boundary north of the A27 (Arundel Road) and south of Crossbush Lane. Temporary construction and permanent access will be from Crossbush Lane within the original PEIR Assessment Boundary. A trenchless crossing (TC-06) of approximately 350m will be undertaken under Crossbush Lane and an area of Ancient Woodland to the north. LACR-02 continues 250m north between woodland and residential properties crossing agricultural land. A trenchless crossing (TC-30) of approximately 100m will be used to pass under mature trees that are connected to the area of Ancient Woodland to the south. An alternative commencement location for LACR-02 is to the west of Clay Lane if the original PEIR Assessment Boundary is followed to this point (via Warningcamp B or C). This alternative starts with a trenchless crossing (TC-30) under Clay Lane and the mature trees that are connected to the area of Ancient Woodland to the south. Temporary construction access will be provided from AA-07 at Warningcamp and through a section of the original PEIR Assessment Boundary and then onwards through AA-28. Permanent access will be via Clay Lane to the north of the junction between Clay Lane and Blakehurst Lane along AA-28.</p>

ID	Description
	<p>LACR-02 continues east for approximately 650m towards Blakehurst including a 125m trenchless crossing (TC-31) of Ancient Woodland. The crossing of Blakehurst Lane will be by open cut trenching and permanent access to the onshore cable route retained.</p>
	<p>LACR-02 continues east then turns north for approximately 1.1km through agricultural land and avoiding Source Protection Zone 1 (SPZ1). Temporary construction access will remain from Warningcamp and operational access off Blakehurst Lane as described above for AA-07 and AA-28.</p>
	<p>LACR-02 then turns east and will follow the route of an existing estate road that also forms a section of the Monarch's Way. At this point, Ancient Woodland is present on either side of the estate road for approximately 1.2km. Therefore, this section will have a reduced working width of 20m to minimise the impact on Ancient Woodland. To enable this reduced width, soil temporarily excavated for this section will be stored in the fields east of Blakehurst. Light temporary construction and permanent access will be retained on this section (AA-29).</p>
	<p>LACR-02 continues north-east at a clearing and reaches a trenchless crossing (TC-32) of approximately 200m under Ancient Woodland. Two options for temporary construction access to this section have been identified. AA-30 will be from the south along Angmering Park Road which is reached off the A27 (Arundel Road). The northern section of AA-30 also provides permanent access linking to AA-29 and LACR-02. The clearing will be reached via a short section of the estate road. The second access is from the north along Angmering Park Road and will vary based on the selection of either LACR-01b or LACR-01c alongside LACR-02. This will utilise either temporary construction and permanent access AA-31 if LACR-01b is selected, or temporary construction and permanent access AA-32 if LACR-01c is selected.</p>
	<p>LACR-02 continues northeast to an open cut crossing of Angmering Park Road and then continues east to the through agricultural fields for approximately 1km to the top of the slope down to Michelgrove. A trenchless crossing (TC-33) will be used to cross this slope. The PEIR Assessment Boundary here has been widened to provide room for alternative crossing routes due to the unknown ground conditions including potential for karst features. LACR-01a will then continue on either LACR-01b or LACR-01c.</p>
	<p>Due to the potential for impacts on Ancient Woodland on the section of LACR-02 that is either side of the estate road for approximately 1.2km, three proposed areas are provided within the PEIR Assessment</p>

ID	Description
	<p>Boundary for compensation. These areas are located adjacent to Upper Oldfield Copse, Lower Oldfield Copse and Oaken Copse in proximity to LACR-02. Within these areas woodland creation and long-term management could take place that aims to deliver bespoke compensation for the loss of Ancient Woodland. The extent, design and delivery of bespoke compensation will need to be agreed with Natural England but will likely include the planting of native tree species, from stock with local provenance. The trees planted may include both saplings and young trees to introduce early heterogeneity and may be surrounded by deer proof fencing to prevent losses to herbivores. Due to the close proximity of these areas to the potential losses, the landform is similar across the area and therefore no ground works will be expected, with saplings likely to be hand planted. These areas are labelled on Figure 44, Appendix A.</p>

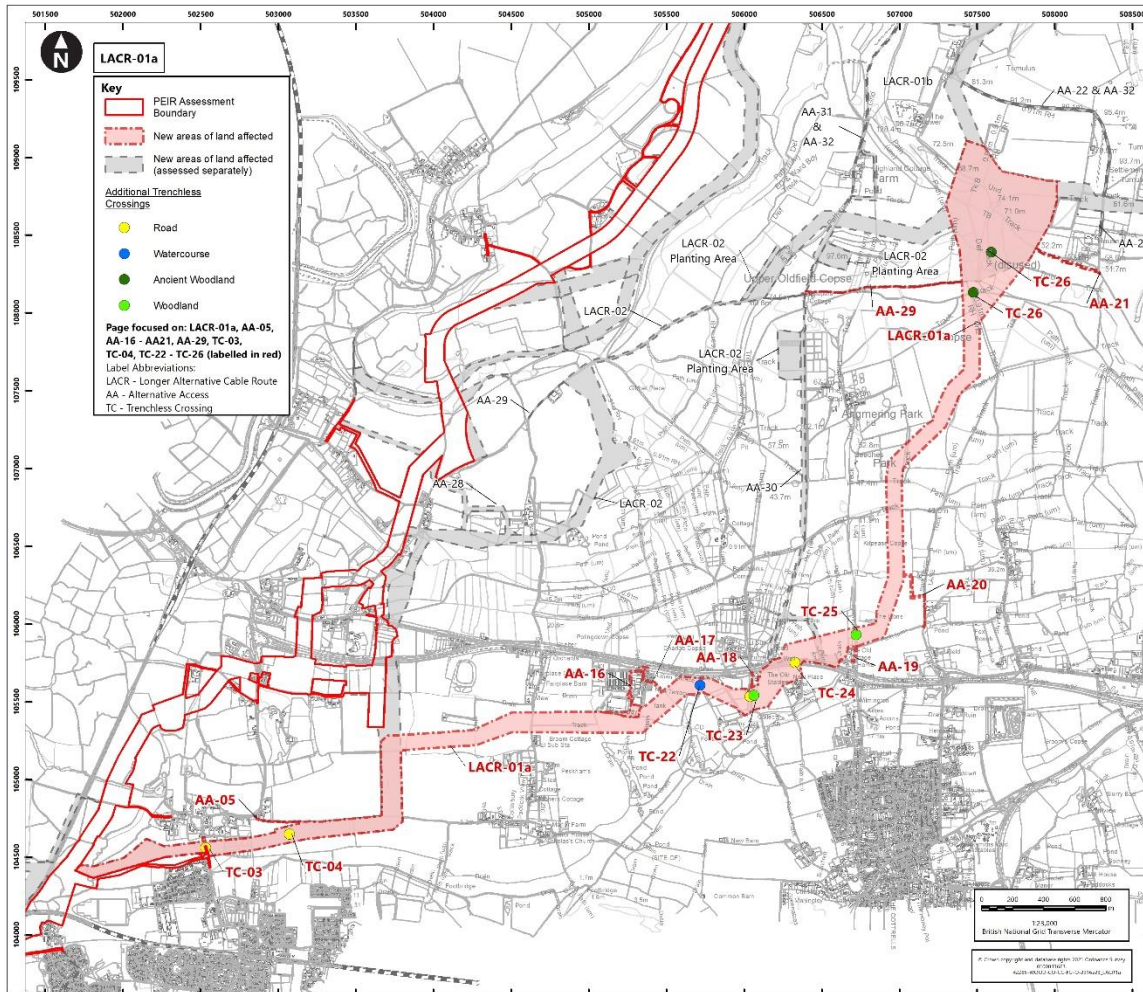
2.2 Environmental review of LACR-01 and LACR-02

- 2.2.1.1 The environmental review of LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 is provided for each environmental aspect below. If LACRs are selected, these will be assessed as part of the ES Assessment Boundary. All full assessments will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.2.1.2 The following environmental review for LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 has considered the implementation of existing PEIR and new/updated embedded environmental measures, **which are specified within each aspect section** and noted in **Appendix F**. For the overall PEIR assessment outcomes and conclusions for each aspect, please see the PEIR summary of residual effects tables set out in **Appendix G**. Additional information for aspect assessments has been provided within **Appendices H-M** and referenced within the relevant aspect section for LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02.

2.3 Longer Alternative Cable Route -01 (LACR-01)

2.3.1.1 LACR-01 is subdivided into LACR-01a, LACR-01b and LACR-01c. In line with the **Consultation Booklet, Graphics 2-1 to 2-3** provided below outline LACR-01a, LACR-01b and LACR-01c respectively. An environmental review is then provided per environmental aspect for LACR-01a, LACR-01b and LACR-01c.

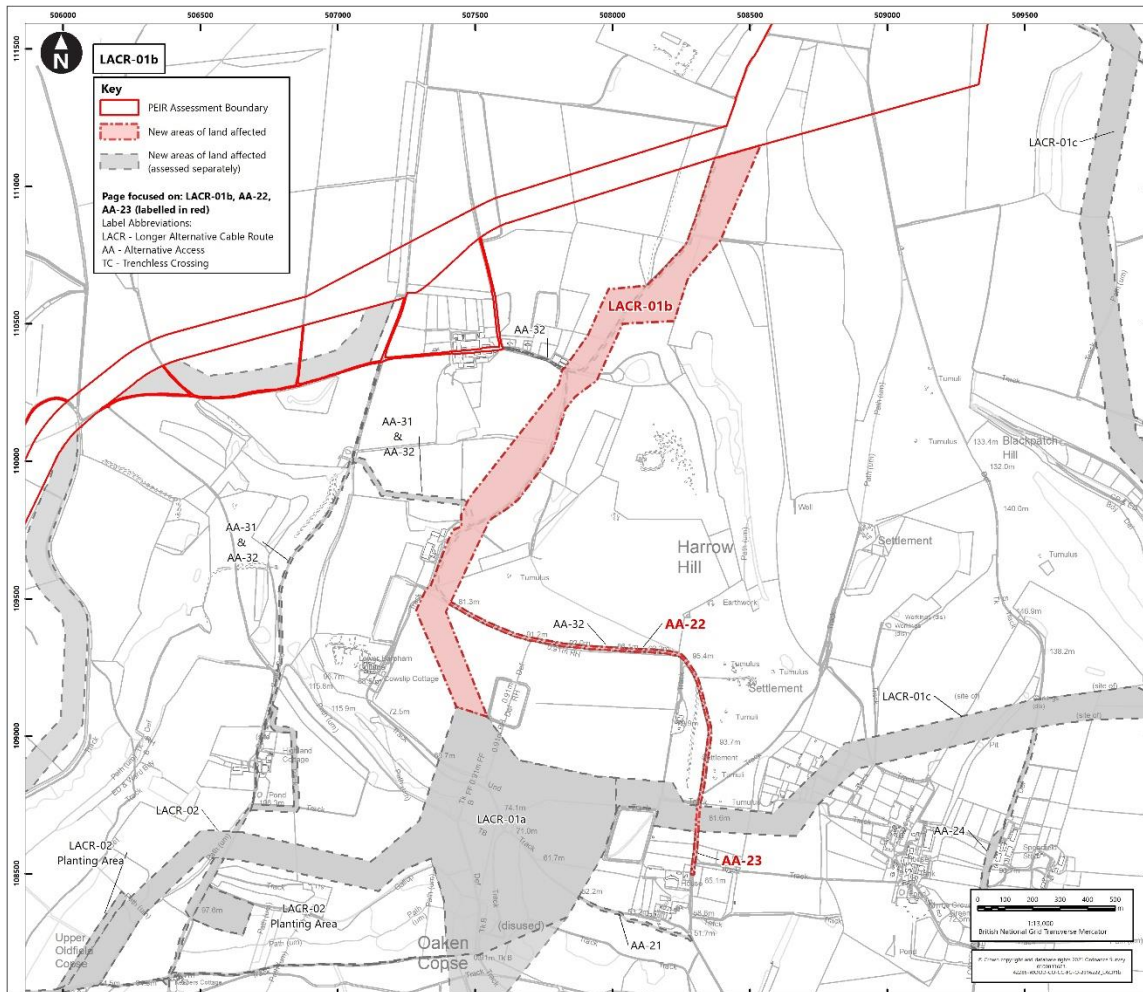
Graphic 2-1 LACR-01a (see Figure 32, Appendix A)



LACR-01a Environmental Review Overview

Additional sensitive receptors introduced as a result of LACR-01a include socio-economics, LVIA, air quality, soils and agriculture, noise and vibration, terrestrial ecology and nature conservation, transport, ground conditions, historic environment and water environment receptors. Some changes in the magnitude of impact to sensitive receptors will be experienced by socio economics, LVIA, water environment and historic environment receptors. Considering the implementation of embedded environmental measures, new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR for LVIA and water environment. The LVIA significant residual effects are likely to be for a temporary period.

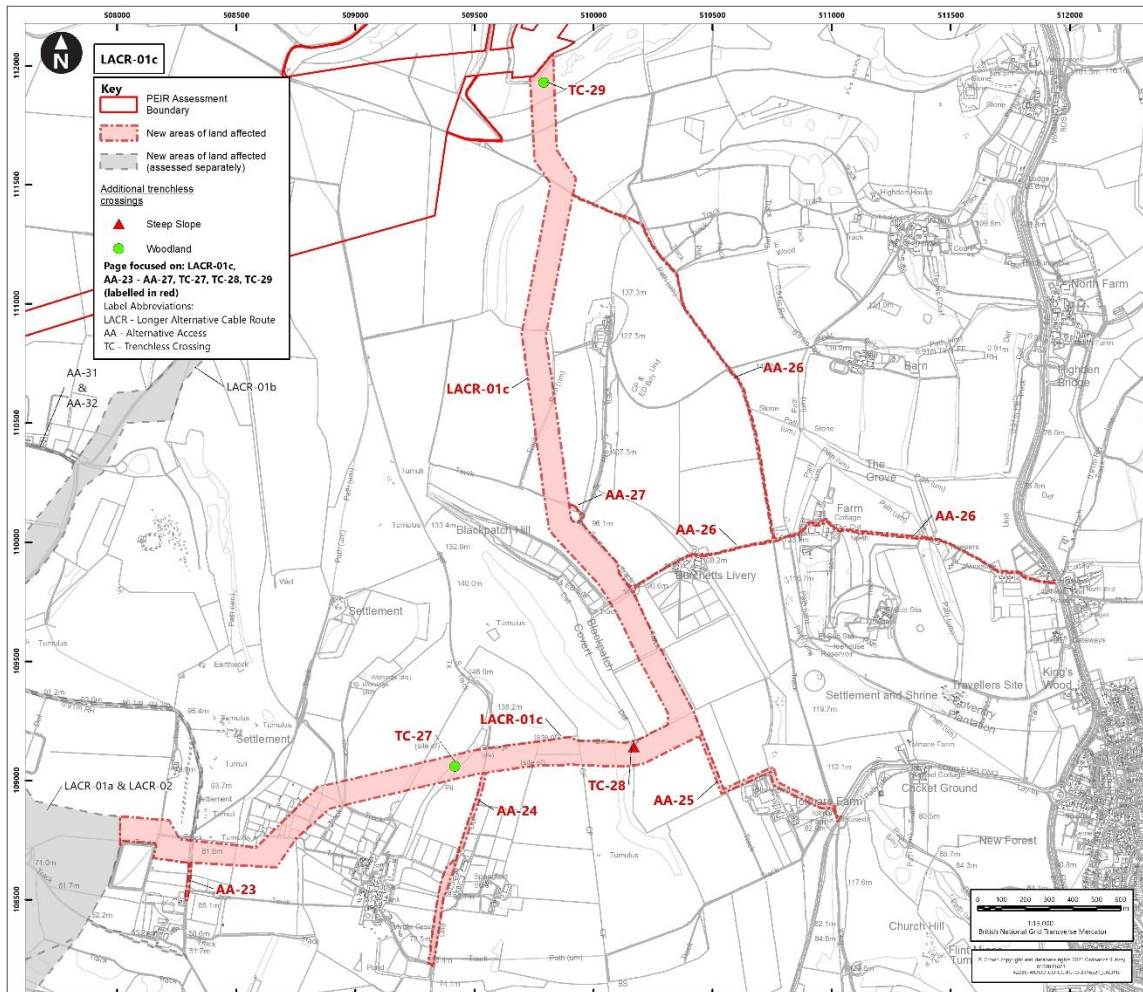
Graphic 2-2 LACR-01b (see Figure 38, Appendix A)



LACR-01b Environmental Review Overview

Additional sensitive receptors introduced as a result of LACR-01b include socio-economics, LVIA, air quality, soils and agriculture, noise and vibration, terrestrial ecology and nature conservation, transport, ground conditions, historic environment and water environment receptors. Some changes in the magnitude of impact to sensitive receptors will be experienced by socio economics, LVIA, water environment and historic environment. Considering the implementation of embedded environmental measures, new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR for LVIA and water environment. The LVIA significant residual effects are likely to be for a temporary period.

Graphic 2-3 LACR-01c (see Figure 40, Appendix A)



LACR-01c Environmental Review Overview

Additional sensitive receptors introduced as a result of LACR-01c include socio-economics, LVIA, air quality, soils and agriculture, noise and vibration, terrestrial ecology and nature conservation, transport, ground conditions, historic environment and water environment receptors. Some changes in the magnitude of impact to sensitive receptors will be experienced by socio economics, LVIA, water environment and historic environment receptors. Considering the implementation of embedded environmental measures, new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR for socio economics, LVIA and water environment. The LVIA significant residual effects are likely to be for a temporary period.

2.3.1.2 **Figures 33-44, 80-91 and 127-138 in Appendix B** outline the key environmental features relevant to LACR-01 (LACR-01a, LACR-01b and LACR-01c) including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 2.3**.

2.3.2 Socio-economics

LACR-01a

2.3.2.1 LACR-01a introduces additional socio-economic receptors including users of Public Rights of Way (PRoWs) including footpaths and bridleways which are detailed from south to north in **Table M-1** in **Appendix M** and shown in **Figures M-1 – M-4**. LACR-01a could affect access to and enjoyment of onshore recreation activity for these receptors. A desk-based assessment has been carried out for each of these receptors and the results of this are presented in **Table M-1** in **Appendix M**. Considering the implementation of embedded environmental measures¹¹ (**Appendix F**), which includes the development and implementation of a **Public Rights of Way Management Plan (PRoWMP)** (C-202) which will set out the management of PRoWs during the construction phase, this will not lead to additional significant residual effects (see **Table G-1** in **Appendix G**) to those presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR.

LACR-01b

2.3.2.2 LACR-01b introduces additional socio-economic receptors including users of Public Rights of Way (PRoWs) including an informal path and bridleways which are detailed from south to north in **Table M-2** in **Appendix M** and shown in **Figures M-1 – M-4**. LACR-01b could affect access to and enjoyment of onshore recreation activity for these receptors. A desk-based assessment has been carried out for each of these receptors and the results of this are presented in **Table M-2** in **Appendix M**. Considering the implementation of embedded environmental measures¹¹ (**Appendix F**), which includes the development and implementation of a **PRoWMP** (C-202) which will set out the management of PRoWs during the construction phase, this will not lead to additional significant residual effects (see **Table G-1** in **Appendix G**) to those presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR.

LACR-01c

2.3.2.3 LACR-01c introduces additional socio-economic receptors including users of PRoWs including footpaths, bridleways and restricted byways which are detailed from south to north in **Table M-3** in **Appendix M** and shown in **Figures M-1 – M-4**. LACR-01c could affect access to and enjoyment of onshore recreation activity for these receptors. A desk-based assessment has been carried out for each of these receptors (see **Table M-3** in **Appendix M**). LACR-01c will lead to a moderate/major adverse effect (**Significant**) on users of restricted byway 2092, where the impact on this route will arise predominantly from its proposed use as a temporary construction access route, resulting in regular, temporary interruptions to users due to temporary construction vehicular traffic and its management. For the users of all the other PRoWs impacted by LACR-01c (see **Table M-3** in **Appendix M**), considering the implementation of embedded environmental measures¹¹ (**Appendix F**), including development and implementation of a **PRoWMP** (C-202) managing PRoWs during the construction phase, this will lead

to additional significant residual effects (see **Table G-1** in **Appendix G**) to those presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.

2.3.2.4 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as a 250m- buffer from mean low water for inshore) and offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

2.3.3 Landscape and visual impact

LACR-01a

2.3.3.1 LACR-01a falls outside of the Study Area provided in **Section 19.4** of **Chapter 19: Landscape and Visual Impact, Volume 2** of the **PEIR**) and illustrated in **Figure 19.1, Volume 3** of the **PEIR**). It also affects new areas of landscape and visual receptors not previously assessed in the original **PEIR**.

2.3.3.2 An extended Study Area illustrating a revised Zone of Theoretical Visibility (ZTV), additional viewpoints and landscape and visual receptors are therefore shown in **Figures H-1 - H-5d** and a preliminary assessment is provided in **Appendix H**.

2.3.3.3 In summary, LACR-01a will pass through seven LCAs and the South Downs National Park (SDNP). LACR-01a will have a significant adverse effect on the following landscape receptors:

- R1: South Downs Upper Coastal Plain LCA;
- B4: Angmering and Clapham Wooded Estate Downland LCA; and
- A3: Arun to Adur Open Downs LCA.

2.3.3.4 In total, LACR-01a crosses approximately seven treebelts/hedgerows with trees/hedges or field boundaries which will be subject to embedded environmental measure C-115 (**Appendix F**) to reduce loss of vegetation/habitat.

2.3.3.5 The geographical extent of these significant adverse residual effects will be largely restricted to approximately <250m of LACR-01a, with the exception of A3 (Arun to Adur Open Downs LCA) where significant adverse residual effects will extend to

within approximately 1km of LACR-01a as a result of multiple elevated areas viewing along the onshore cable corridor.

- 2.3.3.6 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short-term (during the construction phase for the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.
- 2.3.3.7 LACR-01a will also have a significant adverse residual effect on part of the SDNP and two of the seven special qualities of the SDNP will be significantly affected for a temporary period during the construction phase as follows:
- 1) Diverse, inspirational landscapes and breath-taking views; and
 - 3) Tranquil and unspoilt places.
- 2.3.3.8 The nature of these adverse residual effects will extend across part of the SDNP and its setting and expound from significant adverse effects on landscape character and visual receptors that will occur during the construction phase. The duration of the effects will be limited to the construction phase for the onshore cable corridor (onshore cable construction compounds may be in use for up to three years and six months) and some of these residual effects will be cumulative with the offshore elements of the Proposed Development.
- 2.3.3.9 In terms of the integrity of the SDNP, the short duration of these adverse residual effects and the largely reversible nature of the effects (in that the onshore cable corridor will be reinstated and hedgerows re-planted in accordance with the embedded environmental measures in **Appendix F**) indicates that the integrity of this part of the SDNP (within the study area) will not be adversely or significantly affected.
- 2.3.3.10 In terms of visual effects, LACR-01a will have no significant (beneficial or adverse) visual effects on settlements, although there will be significant adverse visual effects from some individual residential properties on the southern edge of Lyminster. Additionally, LACR-01a will have no significant effect (beneficial or adverse) on National Trails including the South Downs Way and the Monarch's Way.
- 2.3.3.11 Beyond this LACR-01a will result in the following significant adverse visual effects during the construction phase:
- Views from transport routes: A284 Lyminster Road and Polling Street off the A27, both of which are crossed by via trenchless crossing.
 - Views from Brookside Caravan Park where the temporary construction activity will be partially visible through perimeter vegetation during the winter months, although it is considered that these views will be screened by vegetation during the summer months.
 - The views from five bridleways and seven footpaths (mostly within the A3: Arun to Adur Open Downs LCA) will be significantly adversely affected as follows:
 - ▶ Bridleways: 2208/1, 2260, 2209, 2192/2 and 2191/2; and

- ▶ Footpaths: 3096, 2156, 2201, 2188, 2187, 2188/1, and 2208/2.
- Views from the Open Access Land at Barpham Hill.

2.3.3.12 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short-term (during the construction phase for the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

LACR-01b

- 2.3.3.13 LACR-01b falls outside of the Study Area provided in **Section 19.4 of Chapter 19** of the **PEIR** and illustrated in **Figure 19.1, Volume 3** of the **PEIR**. It also affects new areas of landscape and visual receptors not previously assessed in the original **PEIR**.
- 2.3.3.14 An extended Study Area illustrating a revised ZTV, additional viewpoints and landscape and visual receptors are shown in **Figures H-1 - H-5d** and a preliminary assessment is provided in **Appendix H**.
- 2.3.3.15 In summary, LACR-01b will pass through one Landscape Character Area (LCA) within the SDNP. LACR-01b will have a significant adverse effect on landscape receptor A3: Arun to Adur Open Downs LCA.
- 2.3.3.16 In total, LACR-01b crosses approximately five treebelts/hedgerows with trees/hedges or field boundaries which will be subject to embedded environmental measure C-115 (**Appendix F**) to reduce loss of vegetation/habitat.
- 2.3.3.17 The geographical extent of these significant adverse residual effects will be largely restricted to approximately 1km of LACR-01b as a result of multiple elevated areas within the A3: Arun to Adur Open Downs LCA viewing along the onshore cable corridor.
- 2.3.3.18 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short-term (during the construction phase of the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.
- 2.3.3.19 LACR-01b will also have a significant adverse residual effect on part of the SDNP and two of the seven special qualities of the SDNP will be significantly adversely affected for a temporary period during the construction phase as follows:
- 1) Diverse, inspirational landscapes and breath-taking views; and
 - 3) Tranquil and unspoilt places.
- 2.3.3.20 The nature of these adverse residual effects will extend across part of the SDNP and its setting and expound from significant adverse effects on landscape character and visual receptors that will occur during the construction phase. The duration of the effects will be limited to the construction phase for the onshore cable corridor (onshore cable construction compounds may be in use for up to three years and six months) and some of these residual effects will be cumulative with the offshore elements of the Proposed Development.

- 2.3.3.21 In terms of the integrity of the SDNP, the short duration of these residual adverse effects and the largely reversible nature of the effects (in that the onshore cable corridor will be reinstated and hedgerows re-planted) indicates that the integrity of this part of the SDNP (within the study area) will not be adversely or significantly affected.
- 2.3.3.22 In terms of visual effects, LACR-01b will have no significant (beneficial or adverse) visual effects on settlements or transport routes. Additionally, LACR-01b will have no significant effect on National Trails including the South Downs Way and the Monarch's Way.
- 2.3.3.23 Beyond this LACR-01b will result in the following significant adverse visual effects during the construction phase:
- The views from six bridleways and one footpath (mostly within the A3: Arun to Adur Open Downs LCA) will be significantly affected as follows:
 - ▶ Bridleways: 2175, 2191/2, 2209, 2252, 2173 and 2282/1; and
 - ▶ Footpaths: 2208/2.
 - Views from the Open Access Land at Barpham Hill and near Harrow Hill.
- 2.3.3.24 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short term (during the construction phase of the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

LACR-01c

- 2.3.3.25 LACR-01c falls outside of the Study Area provided in **Section 19.4 of Chapter 19** of the **PEIR** and illustrated in **Figure 19.1, Volume 3** of the **PEIR**. It also affects new areas of landscape and visual receptors not previously assessed in the original **PEIR**.
- 2.3.3.26 An extended Study Area illustrating a revised ZTV, additional viewpoints and landscape and visual receptors are therefore shown in **Figures H-1 – H-5d** and a full preliminary assessment is provided in **Appendix H**.
- 2.3.3.27 In summary, LACR-01c will pass through two Landscape Character Areas (LCA) and the SDNP. LACR-01c will have a significant adverse effect on landscape receptor A3: Arun to Adur Open Downs LCA.
- 2.3.3.28 In total, LACR-01c crosses approximately 18 treebelts/hedgerows with trees/hedges or field boundaries which will be subject to embedded environmental measure C-115 (**Appendix F**) to reduce loss of vegetation/habitat.
- 2.3.3.29 The geographical extent of these significant adverse residual effects will be largely restricted to approximately 1km of LACR-01c as a result of multiple elevated areas within the A3: Arun to Adur Open Downs LCA viewing along the onshore cable corridor.
- 2.3.3.30 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development.

The duration of these residual effects will be short-term (during the construction phase onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

2.3.3.31 LACR-01c will also have a significant adverse residual effect on part of the SDNP and two of the seven special qualities of the SDNP will be significantly affected for a temporary period during the construction phase as follows:

- 1) Diverse, inspirational landscapes and breath-taking views; and
- 3) Tranquil and unspoilt places.

2.3.3.32 The nature of these adverse residual effects will extend across part of the SDNP and its setting and expound from significant adverse effects on landscape character and visual receptors that will occur during the construction phase. The duration of the effects will be limited to the construction phase for the onshore cable corridor (onshore cable construction compounds may be in use for up to three years and six months) and some of these residual effects will be cumulative with the offshore elements of the Proposed Development.

2.3.3.33 In terms of the integrity of the SDNP, the short duration of these adverse residual effects and the largely reversible nature of the effects (in that the onshore cable corridor will be reinstated and hedgerows re-planted) indicates that the integrity of this part of the SDNP (within the study area) will not be adversely or significantly affected.

2.3.3.34 In terms of visual effects, LACR-01c will have no significant (beneficial or adverse) visual effects on settlements or transport routes.

2.3.3.35 Beyond this LACR-01c will result in the following significant adverse visual effects during the construction phase:

- Views from part of the Monarch's Way which overlaps with Bridleway 2264, 2211 and 2091 and from part of the South Down's Way which overlaps with Bridleway 2673 and 2092; and
- The views from ten bridleways and one footpath (all within the A3: Arun to Adur Open Downs LCA) will be significantly affected as follows:
 - ▶ Bridleways: 2208/1, 2209, 2282/1, 2264, 2106, 2108, 2109, 2282, 2108/1 and 2688; and
 - ▶ Footpaths: 2208/2.
- LACR-01c would have no significant (beneficial or adverse) effect on Open Access Land.

2.3.3.36 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short term (during the construction phase of the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

2.3.4 Air quality

LACR-01a

- 2.3.4.1 Additional air quality residential receptors have been identified within 350m of LACR-01a, including receptors within the villages of Hammerpot, Patching and Michelgrove, farms along Swillage Lane, Seldon Lant, Decoy Lane, the Chestnut Tree house, and a number of isolated farms. The introduction of new sensitive receptors will not change the outcome of the construction dust assessment (**Section 20.9**) or the overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20: Air quality, Volume 2 of the PEIR**) provided in **Sections 20.9** to **20.15** within **Chapter 20 of the PEIR**. The construction dust assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.2 LACR-01a includes trenchless crossings (TC-03, TC-04 and TC-22 – TC 26). The introduction of trenchless crossings and associated temporary compounds may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4 of the PEIR**. However, this does not change the overall assessment and conclusions provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20 of the PEIR**. The construction plant modelling will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.3 LACR-01a includes alternative temporary construction and permanent accesses (AA-05, AA-18, AA-21 and AA-29) and permanent accesses (AA-16, AA-17, AA-19 and AA-20) on the A284, Lillian Terrace/The Vinery, Decoy Lane, Hammerpot, Swillage Lane, and Michelgrove Lane. These alternative temporary construction and permanent accesses introduce additional sensitive receptors within 20m of LACR-01a. These new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20 of the PEIR**) provided in **Sections 20.9** to **20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.4 LACR-01a results in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on the receptors associated with LACR-01a, including those previously noted in **Chapter 20 of the PEIR**. Consequently, there is no change to the overall assessment outcomes and conclusions in the air quality assessment of construction traffic, as provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20 of the PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.5 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

LACR-01b

- 2.3.4.6 Three isolated farms have been identified within 350m of LACR-01b. The introduction of new sensitive receptors will not change the outcome of the construction dust assessment (**Section 20.9**) or the overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20** of the **PEIR**) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the **PEIR**. The construction dust assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.7 LACR-01b does not include additional trenchless crossings and consequently no changes in emissions calculated in the construction plant modelling in **Appendix 20.2** of the **PEIR**. Therefore, there are no changes to the overall assessment and conclusions provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20** of the **PEIR**. The construction plant modelling will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.8 LACR-01b introduces alternative temporary construction and permanent accesses (AA-22 and AA-31). These alternative temporary construction and permanent accesses introduce additional sensitive receptors within 20m of LACR-01b. These new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20** of the **PEIR**) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the **PEIR**. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.9 LACR-01b results in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on the receptors associated with LACR-01b, including those previously noted in **Chapter 20** of the **PEIR**. Consequently, there is no change to the overall assessment outcomes and conclusions in the air quality assessment of construction traffic, as provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20** of the **PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.10 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

LACR-01c

- 2.3.4.11 Five isolated farms have been identified within 350m of LACR-01c. The introduction of new sensitive receptors will not change the outcome of the construction dust assessment (**Section 20.9**) or the overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20** of the **PEIR**) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the **PEIR**. The construction dust assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.12 LACR-01c includes non-road area trenchless crossings (TC-27, TC-28 and TC-29). The introduction of trenchless crossings and associated temporary

compounds may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2 of the PEIR**. However, this does not change the overall assessment and conclusions provided in **Sections 20.9 to 20.15** (see **Table G-8 in Appendix G**) within **Chapter 20 of the PEIR**. The construction plant modelling will be updated in line with the ES Assessment Boundary and presented in the ES.

- 2.3.4.13 LACR-01c introduces alternative temporary construction and permanent accesses (AA-23, AA-24, AA-25 and AA-32) and permanent accesses (AA-26 and AA-27). These alternative temporary construction and permanent accesses introduce additional sensitive receptors within 20m of LACR-01c. These alternative temporary construction accesses introduce additional sensitive receptors within 20m of LACR-01b. These new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C24 in **Appendix F** and **Tables 20-22 and 20-26 from Chapter 20 of the PEIR**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.14 LACR-01c results in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on the receptors associated with LACR-01, including those previously noted in **Chapter 20 of the PEIR**. Consequently, there is no change to the overall assessment outcomes and conclusions in the air quality assessment of construction traffic, as provided in **Sections 20.9 to 20.15** (see **Table G-8 in Appendix G**) within **Chapter 20 of the PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.4.15 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

2.3.5 Soils and agriculture

LACR-01a

- 2.3.5.1 LACR-01a traverses through agricultural land with provisional Agricultural Land Classification (ALC) grades ranging from 2 to 3, which is consistent with the original PEIR Assessment Boundary between Lyminster and Sullington Hill. However, LACR-01a has the potential to encounter a larger proportion of Grade 2 land than the original PEIR Assessment Boundary, based on the Ministry of Agriculture, Fisheries and Food (MAFF) provisional Agricultural Land Classification Map of England and Wales mapping. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR** assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile). The soils and agriculture assessment in **Chapter 21 of the PEIR** is therefore based on all land within PEIR Assessment Boundary being Grade 3a (best and most versatile land) to provide a conservative assessment. Initial ALC survey findings indicate that this is likely to be sufficiently conservative based on

most of the agricultural land within the PEIR Assessment Boundary being Grade 3a or lower. However, this will be confirmed for the ES through further soil and ALC survey to confirm the ALC grades. LACR-01a also crosses an area defined on the provisional ALC mapping as 'Non Agricultural' which comprises woodland west of Michelgrove Lane. Disturbance of woodland soils will be avoided through the use of trenchless crossings (TC-03, TC-04 and TC-22 to TC-26) and no new soil or agricultural land receptors are therefore identified beyond those identified in **Chapter 21 of the PEIR**.

- 2.3.5.2 Based on the temporary onshore construction corridor width being 50m and LACR-01a being approximately 9.4km in length, LACR-01a introduces an additional area of approximately 47ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary. If LACR-01a is selected, this will avoid agricultural land within the original PEIR Assessment Boundary of a similar extent and similar ALC grades, as the relevant PEIR section and LACR-01a routes are mutually exclusive, however for this assessment all of the land potentially affected is included. Although there is an increase in the area of agricultural land potentially affected by Rampion 2, as there is no change to the environmental receptors or the embedded environmental measures (**Appendix F**), LACR-01a does not change the overall assessment outcomes and conclusions (see **Table G-9 in Appendix G**) provided in **Sections 21.9 to 21.13 within Chapter 21 of the PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary.

LACR-01b

- 2.3.5.3 LACR-01b traverses through agricultural land with provisional ALC grades ranging from 2 to 4, which is consistent with the original PEIR Assessment Boundary between Lyminster and Sullington Hill. However, LACR-01b has the potential to encounter a larger proportion of Grade 2 land than the original PEIR Assessment Boundary, based on the MAFF provisional Agricultural Land Classification Map of England and Wales mapping. The assessment provided in **Sections 21.9 to 21.13 within Chapter 21 of the PEIR** assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile). The soils and agriculture assessment in **Chapter 21 of the PEIR** is therefore based on all land within PEIR Assessment Boundary being Grade 3a (best and most versatile land) to provide a conservative assessment. Initial ALC survey findings indicate that this is likely to be sufficiently conservative based on most of the agricultural land within the PEIR Assessment Boundary being Grade 3a or lower. However, this will be confirmed for the ES through further soil and ALC survey to confirm the ALC grades. No new soil or agricultural land receptors are therefore identified beyond those identified in **Chapter 21 of the PEIR**.
- 2.3.5.4 Based on the temporary onshore construction corridor width being 50m and LACR-01b being approximately 3.3km in length, LACR-01b introduces a new area of agricultural land of approximately 16.5ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary. However, if LACR-01b is selected this will avoid agricultural land within the original PEIR Assessment Boundary of a similar extent and similar ALC grades. Although there is an increase in the area of agricultural land potentially affected by Rampion 2, as there is no change to the environmental

receptors or the embedded environmental measures (**Appendix F**), LACR-01b does not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary.

LACR-01c

- 2.3.5.5 LACR-01c traverses through agricultural land with provisional ALC grades ranging from 2 to 4, which is consistent with the original PEIR Assessment Boundary between Lyminster and Sullington Hill. The assessment provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR** assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile). The soils and agriculture assessment in **Chapter 21** of the **PEIR** is therefore based on all land within PEIR Assessment Boundary being Grade 3a (best and most versatile land) to provide a conservative assessment. Initial ALC survey findings indicate that this is likely to be sufficiently conservative based on most of the agricultural land within the PEIR Assessment Boundary being Grade 3a or lower. However, this will be confirmed for the ES through further soil and ALC survey to confirm the ALC grades. No new soil or agricultural land receptors are therefore identified beyond those identified in **Chapter 21** of the **PEIR**.
- 2.3.5.6 Based on the temporary onshore construction corridor width being 50m and LACR-01c being approximately 5.5km in length, LACR-01c introduces an additional area of approximately 27.5ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary. LACR-01c will avoid agricultural land within the original PEIR Assessment Boundary of a similar extent and similar ALC grades. Although there is an increase in the area of agricultural land potentially affected by Rampion 2, as there is no change to the environmental receptors or the embedded environmental measures (**Appendix F**), LACR-01b does not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary.

2.3.6 Noise and vibration (onshore)

LACR-01a

- 2.3.6.1 Additional noise sensitive residential receptors have been identified within 50m of LACR-01a (residential dwellings on Poling Street, residential dwellings on Lillian Terrace/The Vinery, residential dwellings adjacent to the A27, and residential dwellings at Hammerpot). Onshore cable construction activities associated with LACR-01a will be temporary and embedded environmental measures³ (for example acoustic screening and construction noise management measures) will be implemented to minimise noise disturbance. Therefore, despite the introduction of additional noise sensitive receptors, LACR-01a does not change the overall assessment outcomes or conclusions of the onshore cable installation (trenched)

³ See **Appendix F: C-22, C-26, C-33 and C-160**.

assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22: Noise and vibration, Volume 2** of the **PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

- 2.3.6.2 LACR-01a includes several trenchless crossings (TC-03, TC-04 and TC-22 – TC-26). These will be crossing the A284 (TC-03), future Lymminster Bypass (TC-04), Decoy Lane (TC-23), the A27 (TC-24), and three other non-road areas (TC-22, TC-25 and TC-26). These introduce new noise residential receptors within approximately 60m from the proposed trenchless crossing areas. Although LACR-01a introduces new trenchless crossings and associated additional noise sensitive receptors, considering the implementation of embedded environmental measures (**Appendix F**), there is no change to the overall assessment outcomes and conclusions of the trenchless crossing noise assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary in the ES.
- 2.3.6.3 LACR-01a includes alternative temporary construction and permanent accesses (AA-05, AA-18, AA-21 and AA-29) and permanent accesses (AA-16, AA-17, AA-19 and AA-20) on the A284, Lillian Terrace/The Vinery, Decoy Lane, Hammerpot, Swillage Lane, and Michelgrove Lane. These alternative temporary construction and permanent accesses introduce additional noise sensitive receptors within 20m of LACR-01a. The new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions in the assessment of temporary construction and permanent accesses in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The assessment of temporary construction and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.4 LACR-01a will result in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on receptors associated with LACR-01a. Therefore, there is no change to the overall assessment outcomes and conclusions in the assessment of construction traffic noise, as provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.5 Therefore, considering the implementation of embedded environmental measures (**Appendix F**), LACR-01 does not change the overall assessment outcomes and conclusions of no significant effect (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

LACR-01b

- 2.3.6.6 Noise sensitive receptors have not been identified within 50m of LACR-01b. Consequently, LACR-01b does not change the overall assessment outcomes or conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the

PEIR. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

- 2.3.6.7 LACR-01b does not include trenchless crossings. Consequently, there is no change to the overall assessment outcomes and conclusions of the trenchless crossing noise assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary in the ES.
- 2.3.6.8 LACR-01b introduces alternative temporary construction and permanent accesses (AA-22 and AA-31). These alternative temporary construction and permanent accesses introduce additional noise sensitive receptors within 20m of LACR-01b. The new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions in the assessment of temporary construction and permanent accesses in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The assessment of temporary construction and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.9 LACR-01b will result in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on receptors associated with LACR-01b. Therefore, there is no change to the overall assessment outcomes and conclusions in the assessment of construction traffic noise, as provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.10 Therefore, on the basis of the above, LACR-01b does not change the overall assessment outcomes and conclusions of no significant effect (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

LACR-01c

- 2.3.6.11 Noise sensitive receptors have not been identified within 50m of LACR-01c. Consequently, LACR-01c does not change the overall assessment outcomes or conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.12 LACR-01c includes a non-road area trenchless crossings (TC-27, TC-28 and TC-29). Noise sensitive receptors have not been identified within 60 m from the proposed crossing. Consequently, there is no change to the overall assessment outcomes and conclusions of the trenchless crossing noise assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary in the ES.

- 2.3.6.13 LACR-01c introduces alternative temporary construction and permanent accesses (AA-23, AA-24, AA-25 and AA-32) and permanent accesses (AA-26 and AA-27). These alternative temporary construction and permanent accesses introduce additional noise sensitive receptors within 20m of LACR-01c. The new alternative temporary construction and permanent accesses do not change the overall assessment outcomes and conclusions in the assessment of temporary construction and permanent accesses in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The assessment of temporary construction and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.14 LACR-01c will result in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on receptors associated with LACR-01c. Therefore, there is no change to the overall assessment outcomes and conclusions in the assessment of construction traffic noise, as provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22** of the **PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.3.6.15 Therefore, on the basis of the above, LACR-01c does not change the overall assessment outcomes and conclusions of no significant effect (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

2.3.7 Terrestrial ecology and nature conservation

- 2.3.7.1 Baseline information and further details on embedded environmental measures developed since the publication of the **PEIR** (RED, 2021) for LACR-01 are presented in **Appendix I**. Additional survey is ongoing in 2022 to record further details on habitats and species in this area.

LACR-01a

- 2.3.7.2 LACR-01a will result in the avoidance of any effects on the Warningcamp Hill to New Down Local Wildlife Site (LWS) as this routeing does not intersect with the designation boundary at any point. However, it will introduce a trenchless crossing of ancient woodland (listed as Plantation on Ancient Woodland Site (PAWS)) at Michelgrove Park (TC-26). The avoidance of works within the Warningcamp Hill to New Down LWS (see **ACR-04**) will remove a **Significant** effect on this ecological feature as concluded (see **Table G-11** in **Appendix G**) within **Sections 23.10** to **23.14** in **Chapter 23: Terrestrial ecology and nature conservation** of the **PEIR**. Furthermore, the use of trenchless crossing techniques to cross the area of ancient woodland will result in a **Not Significant** effect on this irreplaceable habitat. This construction technique is commonly used to avoid effects on sensitive habitats (including ancient woodland and designated sites) for linear projects across the UK. This is in line with the **Not Significant** conclusions drawn for the use of trenchless crossings for other ecological features (e.g., Sullington Hill LWS) (see **Table G-11** in **Appendix G**) within **Sections 23.10** to **23.14** in **Chapter 23** of

the **PEIR**. It is noted that the trenchless crossing under ancient woodland would have a minimum depth of 6m beneath the surface to avoid damage to tree root systems, and launch and retrieval pits would be set at least 25m from the woodland edge (see **Appendix I**).

- 2.3.7.3 LACR-01a crosses a range of other habitats along its route. South of the A27, the habitats crossed by LACR-01a are largely made up of arable farmland bounded by hedgerows. In some locations (east and west of Decoy Lane) there are small areas of woodland within the onshore cable corridor, although these will be crossed by trenchless crossing techniques (TC-22 and TC-23). Within the general area, but outside of LACR-01a, there are a small number of waterbodies, including one known to support great crested newts, and habitats capable of supporting other legally protected or notable species including badger and a range of bat species. The Black Ditch runs parallel to part of the route, this watercourse is known to support water vole.
- 2.3.7.4 North of the A27 (and south of Michelgrove Park) the habitats crossed by LACR-01a are more complex. LACR-01a progresses across a number of arable and pasture fields, many of which are bounded by woodland blocks mainly being managed for timber production. The majority of these woodlands are listed on the ancient woodland inventory (as PAWS) and have root protection zones outside of the potential working area. Other woodland, mature hedge lines and scrub connect these woodlands across the landscape. LACR-01a does not cross any ancient woodland (other than Michelgrove Park), with TC-24 and TC-25 providing trenchless crossings of some linking linear features (e.g. tree lines and hedgerows). One group of trees (running either side of an estate track), classified as semi-natural broadleaved woodland, may be removed (as part of a realistic worst-case scenario) equating to around 0.03ha. This loss will not alter the conclusions drawn for semi-natural broad-leaved woodland (i.e. a **Significant effect**) (see **Table G-11** in **Appendix G**) within **Sections 23.10** to **23.14** in **Chapter 23** of the **PEIR**. It is noted that by the time a design is finalised, overall the level of woodland loss predicted will likely be well below that reported within **Chapter 23** of the **PEIR**. Desk-study information and walk-over surveys of this section of LACR-01a suggest that a range of legally protected or notable species including badger and a range of bat species use the area.
- 2.3.7.5 Overall, LACR-01a will not alter the assessment outcomes and conclusions provided (see **Table G-11** in **Appendix G**) within **Sections 23.10** to **23.14** in **Chapter 23** of the **PEIR**, other than with regards to avoiding a likely significant effect on the Warningcamp Hill to New Down LWS.

LACR-01b

- 2.3.7.6 North of Michelgrove Park, LACR-01b progresses through a range of arable and improved grassland fields that are bounded, in places, by a small number of hedgerows and treelines. LACR-01b lies adjacent to Harrow Hill which supports good quality semi-improved grassland and lowland calcareous grassland listed on the Priority Habitat Inventory. However, these habitats are not crossed by LACR-01b. Harrow Hill is understood to be the location of a Eurasian curlew release project (first release in 2022), and land to its north and east comprise part of the Peppering Project (a long term, extensive, higher tier Countryside Stewardship scheme see **Appendix I**) where new hedgerows are to be planted in

the winter of 2022/23. The embedded environmental measures described in **Appendix I** will be applicable (with tailoring required to fit the local situation); including the minimisation of hedgerow loss (also see **Appendix F**) and timing of works to avoid the main bird breeding period (1 March to 15 July). Therefore, the effects on hedgerows, treelines and legally protected or notable species will be less than those described within **Sections 23.10 to 23.14** in **Chapter 23** of the **PEIR** where these embedded environmental measures were not detailed. The conclusions drawn for these ecological features remains as reported in **Chapter 23** of the **PEIR**.

- 2.3.7.7 Overall, LACR-01b will not alter the assessment outcomes and conclusions provided (see **Table G-11** in **Appendix G**) within **Sections 23.10 to 23.14** in **Chapter 23** of the **PEIR**. This is because the potential effects associated with temporary habitat loss, fragmentation and disturbance can be effectively managed through the implementation of mitigation (see **Appendix I** for further details).

LACR-01c

- 2.3.7.8 North of Michelgrove Park, LACR-01c progresses through a range of arable and improved grassland fields that are bounded, in places, by a number of hedgerows and treelines. There is an area of good quality semi-improved grassland (as listed on the Priority Habitats Inventory) south of Blackpatch Hill, and lowland calcareous grassland on an escarpment south-west of Black Patch covert. Proposed trenchless crossings at TC-27 will ensure that these areas are retained. The embedded environmental measures described in **Appendix I** will be applicable (with tailoring required to fit the local situation). Therefore, the effects on hedgerows, treelines and legally protected and notable species will be less than those described within **Sections 23.10 to 23.14** in **Chapter 23** of the **PEIR** within which these embedded environmental measures were not detailed. The conclusions drawn for these ecological features remains as reported in **Chapter 23** of the **PEIR**.

2.3.8 Transport

- 2.3.8.1 The introduction of LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 will result in a change in construction traffic numbers to those assessed within **Chapter 24: Transport, Volume 2** of the **PEIR**. Following the introduction of LACR-01 and LACR-02, LACR-01 options LACR-01a and LACR-01c are considered to be the revised maximum design scenario which is further detailed in **Appendix J**. It is considered that the construction traffic generation impacts for LACR-01 (LACR-01a and LACR-1b) and LACR-02 will be less than the new revised maximum design scenario and therefore fall within the assessment of the maximum design scenario for LACR-01a and LACR-01c. The impacts of LACR-01 (LACR-01a and LACR-1c) are assessed in detail in **Appendix J**.
- 2.3.8.2 **Appendix J** identifies four highways links requiring consideration in the assessment of effects in line with Guidelines for the Environmental Assessment of Road Traffic (GEART) (Institute of Environmental Assessment (IEA), 1993). The highways links assessed include:
- Highways Link 5 – A259 West of Wick;

- Highways Link 6 – A284, North of Wick;
- Highways Link 7 – A284, Lyminster; and
- Highways Link 26 – Wineham Lane, South of the A272.

2.3.8.3 The assessment of effects provided in **Appendix J** concludes for all four highway links that, following the implementation of embedded environmental measures⁴ (see **Appendix F**), the significance of residual effects is **negligible** which is **Not Significant** in EIA terms. A summary of residual effects table for the four highway links is provided in **Section 8 of Appendix J**. This is considered alongside the remaining overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) provided in the **Sections 24.10 to 24.15** within **Chapter 24** of the **PEIR** which are unchanged and remain valid.

2.3.8.4 LACR-01 includes for 17 additional PRowWs from those presented in the **PEIR** and these are identified for the LACR-01 options as follows:

- LACR-01a – 2022, 2199, 2198, 2176, 2190, 2188, 2208, 2187/1, 2174_1, 2180_1, 2175, 2111, 2175, 2211_1 and 2210;
- LACR-01b – None; and
- LACR-01c – 2262 and 2260_1.

2.3.8.5 **Section 9 of Appendix J** provides additional details on each PRowW and the potential effects in relation to LACR-01 (LACR-01a, LACR-01b and LACR-01c). The additional PRowWs will be incorporated into the updated **Outline Public Rights of Way Management Plan (PRowWMP)** provided alongside the DCO Application.

2.3.8.6 LACR-01 (LACR-01a, LACR-01b and LACR-01c) includes additional alternative temporary construction and permanent accesses (see **Figure J-1 in Appendix J**) as follows:

- AA-05 – Temporary construction and permanent access to A284 – Lyminster Road;
- AA-16 and AA-17 – Temporary construction and permanent accesses to A24 Westbound (AA-16: temporary construction access only and AA-17: permanent access only);
- AA-18 – Temporary construction and permanent access (Decoy Lane) to A24 Westbound;
- Temporary construction access within LACR-01a – Temporary construction access (Hammerpot) to unnamed road which links to A24 Eastbound;
- AA-21 – Temporary construction and permanent access to Michelgrove Lane;
- AA-22 and AA-23 – Temporary construction and permanent accesses to Michelgrove Lane;

⁴ See **Appendix F: C-1, C-2, C-18, C-157, C-158, C-159, C-165, C-166 and C-169.**

- AA-24 – Temporary construction and permanent access to Longfurlong Lane; and
- AA-25 – Temporary construction and permanent access from A280.

2.3.8.7 These alternative temporary construction and permanent accesses associated with LACR-01 (LACR-01a, LACR-01b and LACR-01c) are outlined in **Section 10 of Appendix J** which provides additional details on each temporary construction and permanent access. These temporary construction and permanent accesses will be reflected in the updated **Outline Construction Traffic Management Plan (CTMP)** provided alongside the DCO Application.

2.3.8.8 LACR-01 (LACR-01a, LACR-01b and LACR-01c) includes new permanent accesses (see **Table 2-1** and **Table 6-1** for descriptions of permanent accesses associated with LACR-01). The assumptions applied to the need and requirements for the permanent accesses remains as presented in the **Chapter 24 of the PEIR**.

2.3.8.9 The assessment of transport effects will be updated in line with the ES Assessment Boundary in the **Outline PRowMP**, **Outline CTMP**, and the ES submitted alongside the DCO Application.

2.3.9 Ground conditions

LACR-01a

2.3.9.1 Ordnance Survey mapping indicates that LACR-01a traverses predominantly across agricultural fields with limited potential for sources of contamination to be present within the onshore cable corridor.

2.3.9.2 No new minerals safeguarding interactions have been identified adjacent to the onshore cable corridor or temporary construction and permanent accesses. Two new potential sources of contamination adjacent to the onshore cable corridor and temporary construction and permanent accesses have been identified from Ordnance Survey mapping and Environment Agency data, comprising an historical landfill at Swillage Lane, Angmering and The Vinery Industrial Estate on the A27, Polling, as summarised below:

- Swillage Lane Landfill:
 - ▶ Landfill located immediately adjacent to part of Swillage Lane to be used as a permanent access (AA-20) but approximately 150m from LACR-01a itself at its closest point;
 - ▶ Landfill indicated to have been licenced to accept inert, commercial and household waste; and
 - ▶ Landfill indicated to have accepted waste between 1950 and 1965.
- The Vinery Industrial Estate:
 - ▶ Industrial estate located adjacent to the A27 and to be used as a temporary construction access (AA-16) and a permanent access (AA-17).
 - ▶ Historic aerial imagery and information available on the Arun District Council planning portal indicates the industrial estate was built on agricultural land

adjacent to the A27 in circa 1990 with additional buildings added to the south (closer to the onshore cable corridor) in circa 2014. Later additions appear to be accompanied by large-scale earthworks.

- ▶ Industrial estate indicated to comprise light industrial warehouses with business including antiques dealers, a kitchen showroom and a small vehicle workshop. The southerly part of the estate built in circa 2015 appears to comprise offices, a garden equipment sales business and a distribution warehouse.

- 2.3.9.3 The part of Swillage Lane to be used for permanent access (AA-20) does not require any alterations/enlargement and given the approximate 150m distance of the historical landfill from LACR-01a itself, there will therefore be no direct interaction with the historical landfill.
- 2.3.9.4 The northern and southern parts of the industrial estate through which the accesses (AA-16 and AA-17) will be operated are existing roads and do not require any alterations/enlargements and therefore there will no direct interaction with any below ground contamination that may be present.
- 2.3.9.5 A land contamination assessment submitted to Arun District Council as part of the planning application for the additional buildings in the south of the industrial estate (application reference A/74/13⁵, located immediately adjacent to where AA-16 meets LACR-01a) indicated that risks to groundwater were low. On this basis, the risk of historic contamination from the industrial estate being encountered in the area of the onshore cable corridor where excavations will take place is considered to be limited.
- 2.3.9.6 Whilst LACR-01a passes directly adjacent to the southern part of the industrial estate, taking into account the fact that this part of the estate comprises only a distribution depot which involved large-scale earthworks to construct, the land contamination assessment submitted as part of that development indicated a low risk to groundwater, and the fact the majority of the potentially contaminative activities in the northern part of the industrial estate are located approximately 125m away from LACR-01a itself, the potential for ground contamination to be encountered at this location is considered to be limited.
- 2.3.9.7 Therefore, taking into account the implementation of the embedded environmental measures⁶ (see **Appendix F**), which include a protocol for encountering unexpected contamination (C-72), there is no change to the overall assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

⁵ Ashdown Site Investigation Limited (2012). Phase 1 Contamination Assessment, The Vinery, Poling, Report No, LW23270/ds, November 2012. (online) Available at: <https://www.arun.gov.uk/planning-application-search> (Accessed September 2022).

⁶ See **Appendix F**: C-1, C-2, C-18, C-32, C-72, C-157, C-158, C-159, C-164, C-165, C-166 and C-169.

LACR-01b

- 2.3.9.8 Ordnance Survey mapping indicates that LACR-01b traverses predominantly across agricultural fields with limited potential for sources of contamination to be present within the onshore cable corridor.
- 2.3.9.9 No new potential sources of contamination or new minerals safeguarding interactions have been identified adjacent to the onshore cable corridor or temporary construction and permanent accesses. Therefore, taking into account the implementation of the embedded environmental measures⁷ (**Appendix F**), which include a protocol for encountering unexpected contamination (C-72), there is no change to the overall assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9** to **25.15** within **Chapter 25** of the **PEIR**.

LACR-01c

- 2.3.9.10 Ordnance Survey mapping indicates that LACR-01c traverses predominantly across agricultural fields with limited potential for sources of contamination to be present within the onshore cable corridor.
- 2.3.9.11 No new minerals safeguarding interactions have been identified adjacent to the onshore cable corridor or temporary construction and permanent accesses. One new potential source of contamination adjacent to the onshore cable corridor has been identified from Environment Agency data, comprising an historical landfill at Long Furlong, Findon, as summarised below:
- Long Furlong, Findon:
 - ▶ Landfill located approximately 35m to the south of a temporary construction and permanent access (AA-25) off Long Furlong (A280) and approximately 700m from LACR-01c itself at its closest point;
 - ▶ Landfill indicated to have been licenced to accept inert waste; and
 - ▶ Landfill indicated to have been licenced in 1976 with waste accepted in 1982.
- 2.3.9.12 Based on the proposed location of the temporary construction and permanent access on the north side of Long Furlong (A280) and given the approximate 700m distance of the historical landfill from LACR-01c itself, there will therefore be no direct interaction with the historical landfill.
- 2.3.9.13 Therefore, considering the implementation of embedded environmental measures which include a protocol for encountering unexpected contamination (C-72), there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9** to **25.15** within **Chapter 25** of the **PEIR**.

⁷ See **Appendix F**: C-1, C-2, C-18, C-32, C-72, C-157, C-158, C-159, C-164, C-165, C-166 and C-169.

2.3.10 Historic environment

- 2.3.10.1 The historic environment baseline for LACR-01a, LACR-01b and LACR-01c is presented in **Appendix K, part K1**, with a gazetteer of known heritage records provided in **Appendix K, part K2**. Please see **Table 6-1** in **Section 6** for access descriptions relevant to LACR-01a, LACR-01b and LACR-01c.
- 2.3.10.2 The development of route option LACR-01a will be required in combination with either LACR-01b or LACR-01c, and therefore where historic environment effects are identified for LACR-01a, these will be cumulative with those effects identified for LACR-01b or LACR-01c, depending on which of the latter routes is taken forward.

Effects arising through change in historic landscape character

- 2.3.10.3 The historic landscape character is considered comparable to that described in **Appendix 26.2 of the PEIR** (see **Section 3.2, Appendix K, part K1**). LACR-01a, LACR-01b and LACR-01c are not expected to change the assessment outcomes or conclusions for the historic landscape character (see **Table G-14** in **Appendix G**) in **Sections 26.9 to 26.15** within **Chapter 26: Historic environment, Volume 2 of the PEIR**.

Direct effects on heritage assets

- 2.3.10.4 Known archaeological assets, and the potential for as yet unknown archaeological assets, within LACR-01a, LACR-01b and LACR-01c are identified in **Section 4** and **Table K1-17, Appendix K, part K1**, together with an indication of their heritage significance (sensitivity). Further information is required to more accurately determine the nature, form and condition of archaeological remains that may be present within LACR-01.
- 2.3.10.5 Where LACR-01a, LACR-01b and LACR-01c intersect with ANAs, these are detailed in **Table K1-3, Appendix K, part K1**.
- 2.3.10.6 There are no extant built heritage assets within LACR-01a, LACR-01b and LACR-01c.

LACR-01a

- 2.3.10.7 Within LACR-01a, previous archaeological investigations have recorded remains of Bronze Age settlement activity at The Vinery (MWS14193). Whilst this area of LACR-01a is now developed with buildings, there is high potential for similar remains to be present within adjacent areas of the LACR-01a boundary.
- 2.3.10.8 The projected route of a Roman road crosses LACR-01a broadly along that of the A27 and there is a known scheduled site of a Roman-British villa (1015886) within the study area. There is high potential for archaeological remains to be present within LACR-01a associated with the Roman road and roadside activity. The heritage significance of such remains would be dependent on their form, extent and condition but in situ settlement remains of have the potential to be of high heritage significance.

- 2.3.10.9 Within LACR01a, there is potential for deeply buried palaeoenvironment deposits within the Arun floodplain and at tributary crossings, which may be of low to medium heritage significance. These deposits have evidential value for the past environments and landscapes in which prehistoric communities lived.
- 2.3.10.10 Within LACR-01a there is evidence for numerous historic extraction pits (some identified on LiDAR data, see **Table K1-4, Appendix K, part K1**). Whilst these present heritage assets of very low heritage significance, they are also sources of truncation which will have impacted the survival of archaeological remains, if present.
- 2.3.10.11 Elsewhere within LACR-01a, other LiDAR features of uncertain date have been identified including linear banks (LDr_422, LDr_425, LDr_429 and LDr_430) suggestive of field boundaries or trackways.

LACR-01b

- 2.3.10.12 Temporary construction access AA-22 leading from Michelgrove Lane to the LACR-01b utilises an existing surfaced trackway which crosses a scheduled monument. This scheduled monument is the Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446), which is of high heritage significance. Whilst construction of passing places may be required along this access, implementation of relevant embedded environmental measure C-13 (**Appendix F**) ensures that the development will not cause physical disturbance to scheduled monuments.
- 2.3.10.13 Within LACR-01b, unknown remains of potentially high heritage significance are indicated by an Archaeological Notification Area (ANA) relating to multi-period archaeological features on Harrow Hill (SDNPA 030), this comprises archaeological remains dating to the prehistoric, Roman and medieval periods on Harrow Hill. These may include features associated with the scheduled Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446) and a Martin Down Style Enclosure dating to the Iron Age (Scheduled Monument 1015239). This ANA is categorised as red inferring the potential for “*nationally important and other significant archaeological sites*” (Salter, 1996).
- 2.3.10.14 There are numerous undated linear banks identified on the LiDAR data on the northwest slopes of Harrow Hill, which share some spatial relationship, some of which extend into the boundary of LACR-01b (and narrowly within access LACR-02 AA-32) (LDr_407, LDr_408, LDr_441, LDr_442, LDr_444 to LDr_451 and LDr_455). They are suggestive of former field boundaries and/or trackways and fall within a broader area identified as a relic field system on LiDAR data (LDr_009), at PEIR stage. However, these features also lie within the same vicinity as HER records relating to Bronze Age ditches (MWS2864) and an Iron Age-Romano British Settlement (MWS2863).
- 2.3.10.15 Elsewhere within LACR-01b, other LiDAR features of uncertain date have been identified including linear banks (LDr_406 and LDr_452) suggestive of former field boundaries.
- 2.3.10.16 As with LACR-01a, there is evidence for numerous historic extraction pits within LACR-01b. Whilst these present heritage assets of very low heritage significance,

they are also sources of truncation which will have impacted the survival of archaeological remains, if present.

LACR-01c

- 2.3.10.17 Within LACR-01c, there are LiDAR features (LDr_410 to LDr_417) relating to a relic field system which appears to extend from the scheduled Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446). These LiDAR features fall within the part of LACR-01c which lies within an ANA (SDNPA 030) comprising archaeological remains dating to the prehistoric, Roman and medieval periods, further indicating the potential for unknown remains of potentially high heritage significance at this location.
- 2.3.10.18 Elsewhere across the downlands within LACR-01c, unknown remains of high heritage significance within the vicinity of Blackpatch Hill, are indicated by another ANA (SDNPA 031). These ANAs are categorised as red inferring the potential for “*nationally important and other significant archaeological sites*” (Salter, 1996). There is a known site of a barrow of possible Bronze Age on Blackpatch (MWS8026 and MWS3388) within LACR-01c. The barrow is not an extant feature, and the current condition and extent of archaeological survival is uncertain. This barrow site lies within ANA SDNPA 031 (also categorised as red), through which LACR-1c crosses.
- 2.3.10.19 Remains of an Iron Age or Roman field system (MWS246 and MWS415) near Muntham Court narrowly extend into LACR-01c, along the temporary construction and operational access (AA-25) from the A280 Long Furlong. It was not possible to access this location during a site walkover of LACR-01c due to land access restrictions. Whilst there is an existing surfaced farm track along this part of the access (AA-25), there is potential for a new temporary stone road to be constructed if needed in the adjacent field. Physical works along this temporary construction and permanent access (AA-25) have the potential to impact this feature.
- 2.3.10.20 Elsewhere within LACR-01c, LiDAR features of uncertain date have been identified including a low mound indicating possible barrow (LDr_132) and a linear earthwork bank (LDr_388).

Summary of direct effects on heritage assets for LACR-01 (LACR-01a, LACR-01b and LACR-01c)

- 2.3.10.21 Overall, each LACR has archaeological potential for all periods, ranging from very low to high (see **Section 4** and **Table K1-17, Appendix K, part K1** for details of each LACR). As summarised in **Paragraphs 2.3.10.4 to 2.3.10.20** of this report and in **Appendix K, part K1**, each LACR may impact archaeological remains with heritage significance ranging from very low to high. The magnitude of change could be up to high, though given the width of the onshore construction corridor in relation to the extent of the known and potential archaeological assets, a low to medium magnitude of change is more likely (**Table 26-21, Chapter 26 of the PEIR**). Whilst this could lead to potentially significant adverse effects, which will be permanent, further information obtained by field investigations along with any subsequent proposed embedded environmental measures (**Appendix F**), described in C-79, together within the avoidance of areas of sensitivity (or heritage

significance) (C-6), will seek to limit the magnitude and overall effect on archaeological assets to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms. The summary of effects is consistent with that identified at PEIR (**Table 26-36, Chapter 26 of the PEIR**). As per PEIR stage (**Table 26-8, Chapter 26 of the PEIR**), any disturbance of archaeological heritage assets within LACR-01 will occur during the construction phase of the Proposed Development. No further effects are anticipated during the operation and maintenance phase.

Effects arising through change to setting of heritage assets

- 2.3.10.22 LACR-01a, LACR-01b and LACR-01c introduce new designated heritage assets not previously identified within the baseline in **Appendix 26.2 of the PEIR** (see **Table K3-1, Appendix K, part K3**). This has the potential to change the assessment outcomes and/or conclusions for some designated heritage assets (e.g., conservation areas, listed buildings, scheduled monuments) identified at PEIR (**Sections 26.9 to 26.15 within Chapter 26 of the PEIR**). However, there are no designated heritage assets identified within the boundary of LACR-01a, LACR-01b and LACR-01c.
- 2.3.10.23 **Table K3-1, Appendix K part K3** lists all of the potential effects arising through the change to setting of heritage assets associated with the construction phase of LACR-01a, LACR-01b and LACR-01c. An indication is provided of the range of magnitude of change and heritage significance (sensitivity) definitions for each potential effect based on the definitions provided within **Section 26.8 in Chapter 26 of the PEIR**. Overall, during the construction phase of LACR-01a, LACR-01b and LACR-01c, there is potential for a very low to low magnitude of change to receptors of high heritage significance, resulting in **minor to moderate adverse effects**. Minor adverse effects will be **Not Significant** and moderate adverse effects could potentially be **Significant**. In addition, during the construction phase of LACR-01a, there is potential for a medium magnitude of change to a receptor of high heritage significance (grade II listed The Old Cottage 1027714), resulting in a major adverse effect, which could be **Significant**. The magnitude of change, and hence the significance of potential effects, have been assessed on the assumption that embedded environmental measures⁸ have been implemented as part of the Proposed Development. A precautionary approach has been taken in the identification of potential effects within the PEIR SIR assessment, reflecting the level of detail available for the construction phase. It is anticipated that as detail of the construction sequence is further refined, the potential effects arising through change to setting identified at PEIR SIR will be reduced. Where effects through changes to setting are identified during the construction phase, these are expected to be short-term and temporary.
- 2.3.10.24 Development within LACR-01a, LACR-01b and LACR-01c is unlikely to impact the setting of other designated heritage assets within the Study Area (see **Table K2-1, Appendix K, part K2**) due to the nature of the assets, topography, intervening planting and built infrastructure, and the relative distance from LACR-01a, LACR-

⁸ See **Appendix F: C-1, C-4, C-9, C-11, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-80, C-81, C-82 and C-157**.

01b and LACR-01c. No effects are anticipated and therefore they will not be considered for assessment in the ES.

2.3.11 Water environment

- 2.3.11.1 Additional water environment receptors within the vicinity of LACR-01 (LACR-01a, LACR-01b and LACR-01c) have been identified and assessed in **Tables L-1 to L-4 of Appendix L. Tables L-5 to L-7 of Appendix L** subsequently list all of the potential effects on the water environment receptor groups associated with the construction, operation and maintenance and decommissioning phases associated with LACR-01 (LACR-01a, LACR-01b and LACR-01c). An indication is provided of the range of magnitude of effect and the value based on definitions provided within **Section 27.8 in Chapter 27 of the PEIR**. Overall, there is potential for negligible to medium magnitude of change effects towards receptors of very low to high value, resulting in predominantly negligible to minor adverse (**Not Significant**) effects and one minor to major adverse effect (for LACR-01a, and LACR-01c), which could potentially be **Significant**.
- 2.3.11.2 The proposals for trenchless crossings along sections of LACR-01 (including LACR-01a, LACR-01b and LACR-01c) and the potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a low or medium magnitude of effect and this could be potentially significant. At this preliminary stage, there is uncertainty over the level of risk associated with LACR-01 (LACR-01a, LACR-01b and LACR-01c) and significant adverse effects on the underlying aquifer, public water supplies (e.g., Angmering and Patching public water supply) and other features including the Decoy, Angmering Park Stud Farm and Long Furlong Barn PWSs cannot be ruled out at this preliminary stage of assessment. (see **Appendix L**).
- 2.3.11.3 However, a detailed Hydrogeological Risk Assessment will be prepared to support the Water environment chapter in the ES. This will be undertaken to further understand the potential relationship between LACR-01 (LACR-01a, LACR-01b and LACR-01c) and the public water supply and other potential 'receptors'. This will be supported by a site visit and conceptual cross sections to establish relative elevations and pathway linkages. This will assist in establishing whether there is a source - pathway - receptor link between LACR-01 (LACR-01a, LACR-01b and LACR-01c), the public water supply and/or other water features in the area and will consider additional embedded environmental measures where necessary to minimise potential adverse water quality effects.

2.3.12 Major accidents and disasters

- 2.3.12.1 In relation to major accidents and disasters, the routes associated with LACR-01 (including LACR-01a, LACR-01b and LACR-01c) are largely comparable to the original PEIR Assessment Boundary. It does not run through the consultation distances of any new Control of Major Accident Hazard (COMAH) facilities, nor does it introduce any significant new hazards or receptor populations. Therefore, LACR-01 does not significantly alter the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2 of the PEIR**.

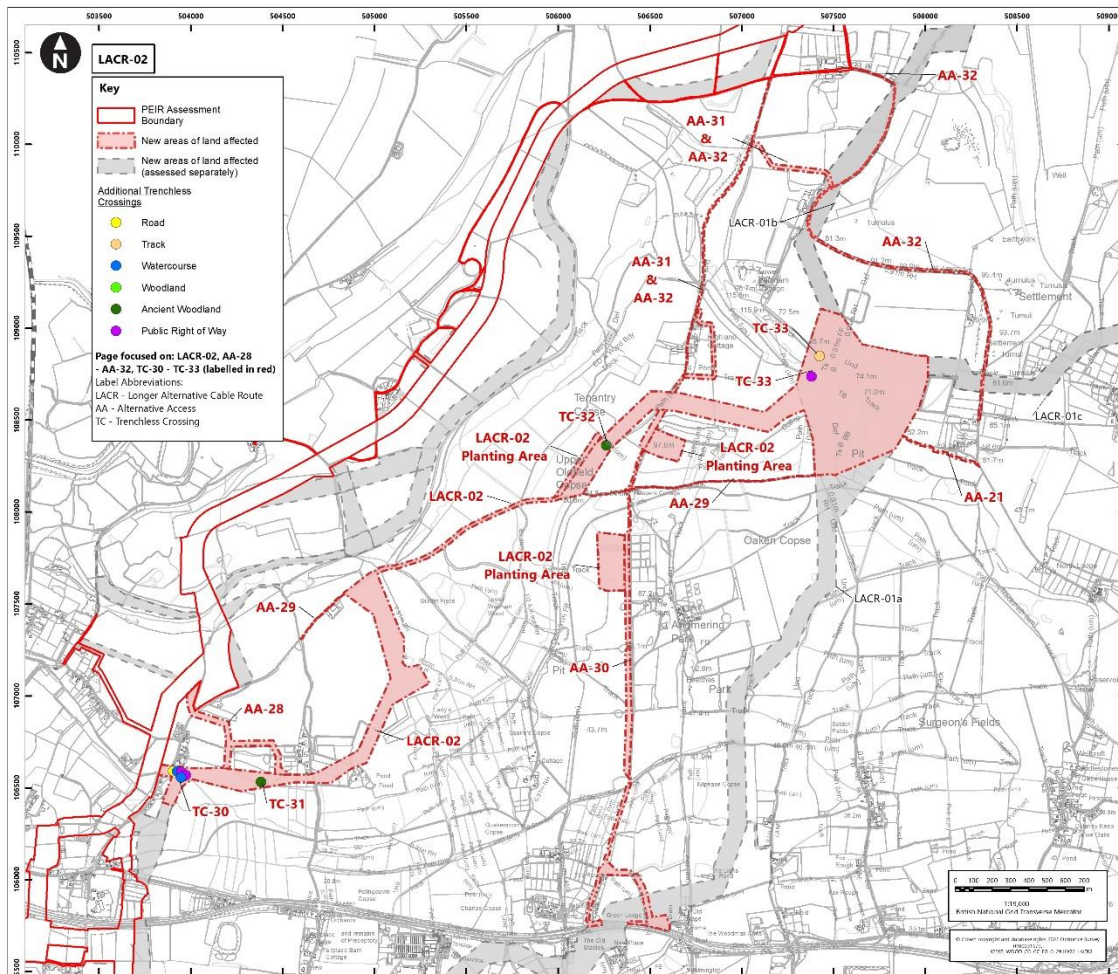
2.3.13 **Greenhouse gas assessment**

- 2.3.13.1 The routes associated with LACR-01 (including LACR-01a, LACR-01b and LACR-01c) do not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4 of the PEIR.**

2.4 Longer Alternative Cable Route -02 (LACR-02)

2.4.1.1 In line with the **Consultation Booklet**, **Graphic 2-4** below outlines LACR-02. An environmental review is then provided per environmental aspect. Where further information has been required to inform the environmental review, this is provided in relevant **Appendices H-M**.

Graphic 2-4 LACR-02 (see Figure 44, Appendix A)



LACR-02 Environmental Review Overview

Additional sensitive receptors introduced as a result of LACR-02 include socio-economics, LVIA, air quality, soils and agriculture, noise and vibration, terrestrial ecology and nature conservation, transport, ground conditions, historic environment and water environment receptors. Some changes in the magnitude of impact to sensitive receptors will be experienced by socio economics, LVIA, soils and agriculture, water environment, terrestrial ecology and historic environment receptors. Considering the implementation of embedded environmental measures, new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR for socio economics, LVIA, soils and agriculture, water environment and terrestrial ecology. The LVIA significant residual effects are likely to be for a temporary period.

2.4.1.2 **Figures 45-49, 92-96 and 139-143 in Appendix B** outline the key environmental features relevant to LACR-02 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 2.4**.

2.4.2 Socio-economics

2.4.2.1 LACR-02 introduces additional socio-economic receptors including users of PRowS including footpaths and bridleways which are detailed from approximately south to north in **Table M-4 in Appendix M** and shown in **Figures M-1 – M-4**. LACR-02 could affect access to and enjoyment of onshore recreation activity for these receptors. A desk-based assessment has been carried out for each of these receptors (see **Table M-4 in Appendix M**). Summaries of new significant effects are set out below.

2.4.2.2 LACR-02 will lead to a **moderate adverse effect (Significant)** on users of bridleway 2189_1, where the impact on this route will arise predominantly from interruption to users for traffic control on the temporary construction access route.

2.4.2.3 LACR-02 will lead to a **major adverse effect (Significant)** on users of bridleway 2211, where the impact on this route will arise from the need for temporary diversion of about 3km of the bridleway, which is part of the high profile promoted route – Monarch's Way.

2.4.2.4 LACR-02 will lead to a **moderate adverse effect (Significant)** on users of the southern section of bridleway 2192_2, where the impact on this route will arise from the temporary obstruction of the route requiring a local diversion and also the temporary interruption to users for traffic control on the temporary construction access route.

2.4.2.5 LACR-02 will lead to a **moderate/major adverse effect (Significant)** on users of bridleway 2175, where the impact on this route will arise from the need for temporary diversion during construction and requiring a local diversion.

2.4.2.6 LACR-02 will lead to a **minor/moderate adverse effect (Significant)** on users of bridleway 3558_1, where the impact on this route will arise from interruption to users for traffic control purposes on the temporary construction access route.

2.4.2.7 For the users of all the other PRowS impacted by LACR-02 (see **Table M-4 in Appendix M**), considering the implementation of embedded environmental measures¹¹ (**Appendix F**), including development and implementation of a **PRowMP (C-202)** managing PRowS during the construction phase, LACR-02 will not lead to additional significant residual effects (see **Table G1 in Appendix G**) to those presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.

2.4.2.8 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore

route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);

- the impact on tourism economy is considered at the Sussex study area and the changes set out in this PEIR SIR have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

2.4.3 Landscape and visual impact

- 2.4.3.1 LACR-02 falls outside of the Study Area provided in **Section 19.4 of Chapter 19: Landscape and Visual Impact, Volume 2** of the **PEIR**) and illustrated in **Figure 19.1, Volume 3** of the **PEIR**). It also affects new areas of landscape and visual receptors not previously assessed in the original **PEIR**.
- 2.4.3.2 An extended Study Area illustrating a revised Zone of Theoretical Visibility (ZTV), additional viewpoints and landscape and visual receptors are shown in **Figures H-1 – H-6** and a preliminary assessment is provided in **Appendix H**.
- 2.4.3.3 In summary, LACR-02 will pass through four LCAs and the South Downs National Park (SDNP). LACR-02 will have a significant adverse effect on the following landscape receptors:
- G4: Arun Valley Sides;
 - R1: South Downs Upper Coastal Plain;
 - B4: Angmering and Clapham Wooded Estate Downland; and
 - A3: Arun to Adur Open Downs.
- 2.4.3.4 In total, LACR-02 crosses approximately seven treebelts/hedgerows with trees/hedges or field boundaries which will be subject to embedded environmental measure C-115 (**Appendix F**) to reduce loss of vegetation/habitat.
- 2.4.3.5 The geographical extent of these significant adverse residual effects will be largely restricted to approximately <250m of LACR-02 with the exception of the A3: Arun to Adur Open Downs, where significant adverse residual effects will extend to within approximately 1km of LACR-02 as a result of multiple elevated areas viewing along the onshore cable corridor.
- 2.4.3.6 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short-term (during the construction phase for the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

- 2.4.3.7 LACR-02 will also have a significant adverse residual effect on part of the SDNP and two of the seven special qualities of the SDNP will be significantly affected for a temporary period during the construction phase as follows:
- 1) Diverse, inspirational landscapes and breath-taking views; and
 - 3) Tranquil and unspoilt places.
- 2.4.3.8 The nature of these adverse residual effects will extend across part of the SDNP and its setting and expound from significant adverse effects on landscape character and visual receptors that will occur during the construction phase. The duration of the effects will be limited to the construction phase for the onshore cable corridor (onshore cable construction compounds may be in use for up to three years and six months) and some of these residual effects will be cumulative with the offshore elements of the Proposed Development.
- 2.4.3.9 In terms of the integrity of the SDNP, the short duration of these adverse residual effects and the largely reversible nature of the effects (in that the onshore cable corridor will be reinstated and hedgerows re-planted) indicates that the integrity of this part of the SDNP (within the study area) will not be adversely or significantly affected.
- 2.4.3.10 In terms of visual effects, LACR-02 will have no significant (beneficial or adverse) visual effects on settlements, although there will be significant adverse visual effects from some individual residential properties on the eastern edge of Warningcamp along Clay Lane. Additionally, LACR-02 will have no significant effect (beneficial or adverse) on the South Downs Way National Trail.
- 2.4.3.11 Beyond this LACR-02 will result in the following significant adverse visual effects during the construction phase:
- Views from transport routes: Clay Lane and Blakehurst Lane.
 - Views from part of the Monarch's Way which overlaps with Bridleway 2211.
 - The views from five bridleways and three footpaths will be significantly adversely affected as follows:
 - ▶ Bridleways: 2212, 2221, 2191/2, 2260 and 2208/1.
 - ▶ Footpaths: 2226, 2256 and 2208/2; and
 - Views from the Open Access Land at Barpham Hill.
- 2.4.3.12 The nature of these residual effects will be both direct and indirect, adverse and in some cases cumulative with the offshore elements of the Proposed Development. The duration of these residual effects will be short-term (during the construction phase for the onshore cable corridor) and largely reversible with progressive backfill and reinstatement of the onshore cable corridor as the works progress.

2.4.4 Air quality

- 2.4.4.1 Additional air quality residential receptors have been identified within 350m of LACR-02 including receptors within the village of Hammerpot, farms along Swillage Lane, Decoy Lane, the Chestnut Tree house, and a number of isolated farms near Long Furlong Lane and Michelgrove Lane. The introduction of new

sensitive receptors will not change the outcome of the construction dust assessment (**Section 20.9**) or the overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20: Air Quality Volume 2** of the PEIR) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the PEIR. The construction dust assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

- 2.4.4.2 LACR-02 includes several trenchless crossings (TC-30, TC-31, TC-32 and TC-33). These will be crossing several non-road areas. The introduction of trenchless crossings and associated temporary compounds may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4** of the PEIR. However, this does not change the overall assessment and conclusions provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20** of the PEIR. The construction plant modelling will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.4.3 LACR-02 includes alternative temporary construction and permanent access (AA-21, AA-28, AA-29, AA-30, AA-31 (if via LACR-01b) and AA-32 (if via LACR-01c)), and temporary construction access AA-30 on Michelgrove Lane, Blakehurst Lane and several lanes in the Angmering Park area. These alternative temporary construction and permanent accesses introduce additional sensitive receptors within 20m of LACR-02. These alternative temporary construction accesses do not change the overall assessment outcomes and conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20** of the PEIR) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the PEIR. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.4.4 LACR-02 results in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on the receptors associated with LACR-02, including those previously noted in **Chapter 20** of the PEIR. Consequently, there is no change to the overall assessment outcomes and conclusions in the air quality assessment of construction traffic, as provided in **Sections 20.9** to **20.15** (see **Table G-8** in **Appendix G**) within **Chapter 20** of the PEIR. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.4.5 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

2.4.5 Soils and agriculture

- 2.4.5.1 LACR-02 traverses through agricultural land with provisional ALC grades ranging from 2 to 4. The ALC grades within LACR-02 are consistent with the original PEIR Assessment Boundary between Lyminster and Sullington Hill.
- 2.4.5.2 In relation the effects on agricultural land, the assessment provided in **Sections 21.9** to **21.13** within **Chapter 21: Soils and agriculture, Volume 2** of

the **PEIR** assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile). The soils and agriculture assessment in **Chapter 21 of the PEIR** is therefore based on all land within the PEIR Assessment Boundary being Grade 3a (best and most versatile land) to provide a conservative assessment. Initial ALC survey findings indicate that this is likely to be sufficiently conservative based on most of the agricultural land within the PEIR Assessment Boundary being Grade 3a or lower. However, this will be confirmed for the ES through further soil survey and ALC survey to confirm the ALC grades.

- 2.4.5.3 LACR-02 also crosses woodland, which is classed according to the MAFF provisional Agricultural Land Classification Map of England and Wales mapping as non-agricultural land. LACR-02 is the only route option to cross woodland, other than by trenchless crossings which avoid effects on soils and the vegetation present. Due to the length of the route through the woodland of approximately 1.2km, trenchless crossing, such as HDD below the woodland, is unlikely to be feasible. The route through the woodland follows an existing tarmac track, however removal of trees, and associated woodland soils, will be necessary over an area of approximately 0.12ha of semi-natural broad-leaved woodland at the Warningcamp and New Down Local Wildlife Site and 0.99ha of plantation on Ancient Woodland soils (PAWS) listed on the Ancient Woodland Inventory, the total area of woodland soil removed is therefore 1.11ha. This section of the route will have a reduced working width of 20m to minimise the impact on Ancient Woodland. Following cable construction, the woodland would not be re-established due to the easement needed for the onshore cables, and permanent/long term degradation of the woodland soils is therefore likely. This introduces a new soil receptor that was not included in the **PEIR**, and the woodland soil is assessed according to the methodology in **Section 21.8** of the **PEIR** as a moderate sensitivity soil receptor.
- 2.4.5.4 Due to the potential for impacts on Ancient Woodland, LACR-02 includes three areas proposed for compensation. These areas are currently agricultural fields, two of which are shown on the provisional Agricultural Land Classification Map of England and Wales mapping as Grade 3 land, the smallest of the three is shown as non-agricultural. The proposed compensation measure is to establish woodland across their entirety with long-term management measures. As described in **Table 2-1**, no ground works are anticipated within the compensation areas e.g., by hand planting of saplings, and soil disturbance would therefore expect to be minimal. These soils in the compensation areas have not currently been considered as a new receptor given the minimal disturbance to soil and continuation of vegetation cover, however this will be re-evaluated in the ES. Soils excavated from the existing woodland would be reinstated at their original location following onshore cable construction however the woodland vegetation would not be restored. For the purposes of this assessment, it is assumed that without trees within the onshore cable easement in former woodland, the woodland soils (1.11ha) would be lost or significantly degraded.
- 2.4.5.5 LACR-02 covers 5.9km of which 4.7km runs through agricultural land and 1.2km runs through woodland. The agricultural land area comprises approximately 24.6ha, based on an onshore cable corridor 50m wide over 4.7km. This equates to an additional area of agricultural land of 23.5ha (not including the corridor through the woodland area as described in **Paragraph 2.4.5.3**) potentially subject to temporary disturbance during the construction phase. If LACR-02 is selected, this

will avoid agricultural land within the original PEIR Assessment Boundary of a similar extent and similar ALC grades, as the relevant **PEIR** section and LACR-02 routes are mutually exclusive, however for this assessment all of the land potentially affected is included. Although there is an increase in the area of agricultural land affected, there is no change to the environmental receptors or the embedded environmental measures³, LACR-02 does not change the overall assessment outcomes and conclusions for agricultural soils (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

- 2.4.5.6 LACR-02 introduces a new likely effect on 1.11ha of woodland soils within the reduced width (20m) working corridor which includes the existing estate road. The woodland soils would be reinstated however the land cover would be altered, which would have an impact on the soil health and soil function. The magnitude of change is assessed as low, based on the area affected, and based on the woodland soils being a moderate sensitivity receptor. The evaluation of the significance of the effect is **minor adverse (Not Significant)**. On the land used for compensation, it is assumed that the entire area available for compensation measures is needed, and that the land cannot be used for harvesting of any biomass other than as is needed for maintenance of the woodland, i.e. the agricultural biomass production function is lost. The total area for compensation required for LACR-02 is approximately 11.0ha, of which 7.4ha is shown on provisional ALC mapping as Grade 3 (one area within woodland is shown as non agricultural). Based on the assumption that this is best and most versatile (BMV) land (Grade 3a) and that permanent degradation of this area of agricultural land would occur due to the loss of the soil's biomass function, the magnitude of change is low, and the significance of the effect is **moderate adverse (Potentially Significant)**. The embedded environmental measures for soils will be updated in the ES to include survey of soils and identification of ALC grades within the affected woodland area and the three compensation areas to inform soil management planning. The ALC survey information will inform the final updated ES assessment and conclusions on significance.

2.4.6 Noise and vibration (onshore)

- 2.4.6.1 Additional noise sensitive residential receptors have been identified within 50m of LACR-02 (residential dwellings on Clay Lane, residential dwellings on Blakehurst Lane, and Norfolk House on Swillage Lane). Onshore cable construction activities associated with LACR-02 will be temporary and embedded environmental measures⁹ (for example acoustic screening and construction noise management measures) will be implemented to minimise noise disturbance. Therefore, despite the introduction of additional noise sensitive receptors, LACR-02 does not change the overall assessment outcomes or conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22: Noise and vibration, Volume 2** of the **PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.6.2 LACR-02 includes several trenchless crossings (TC-30, TC-31, TC-32 and TC-33). These will be crossing several non-road areas. These introduce new noise

⁹ See **Appendix F: C-22, C-26, C-33 and C-160**.

residential receptors within approximately 60m from the proposed trenchless crossing areas. Although LACR-02 introduces new trenchless crossings and associated additional noise sensitive receptors, considering the implementation of embedded environmental measures, there is no change to the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22 of the PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary in the ES.

- 2.4.6.3 LACR-02 includes alternative temporary construction and permanent access (AA-21, AA-28, AA-29, AA-30 and AA-31 (if via LACR-01b) and AA-32 (if via LACR-01c)) temporary construction access AA-30 on Michelgrove Lane, Blakehurst Lane and several lanes in the Angmering Park area. These alternative temporary construction access routes introduce additional noise sensitive receptors within 20m of LACR-02. The new alternative temporary construction accesses do not change the overall assessment outcomes and conclusions in the assessment of temporary construction and permanent accesses in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22 of the PEIR**. The assessment of temporary construction and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.6.4 LACR-02 will result in changes to construction traffic flows on the surrounding road network during the construction phase. However, the change in construction traffic flows will result in a negligible impact on receptors associated with LACR-02. Therefore, there is no change to the overall assessment outcomes and conclusions in the assessment of construction traffic noise, as provided in **Section 22.9** (see **Table G-10** in **Appendix G**) within **Chapter 22 of the PEIR**. The construction traffic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 2.4.6.5 Therefore, considering the implementation of embedded environmental measures, LACR-02 does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9 to 22.15** within **Chapter 22 of the PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

2.4.7 Terrestrial ecology and nature conservation

- 2.4.7.1 Baseline information for LACR-02 is presented in **Appendix I**. Also within **Appendix I** are further details on proposed embedded environmental measures developed since the publication of the **PEIR** (RED, 2021). Additional survey is ongoing in 2022 to record further details on habitats and species in this area.
- 2.4.7.2 LACR-02 will alter the type of effects on the Warningcamp Hill to New Down Local Wildlife Site (LWS). Rather than the loss of calcareous grassland (see assessment of **ACR-04**), there will be loss of woodland that lies adjacent to the tarmac track marking its south-eastern boundary. This loss will equate to approximately 0.12ha and will comprise semi-natural broad-leaved woodland (mainly oak with an understorey of hazel coppice). Although the effects are different, the conclusions drawn (i.e., a **Significant** effect) within **Sections 23.10 to 23.14** in **Chapter 23: Terrestrial ecology and nature conservation** of the **PEIR** remain valid. Although

the area of habitat lost is relatively small in comparison to the extent of woodland within the LWS (less than 0.5%) it is a habitat that will be lost permanently as woodland cannot be re-established over the onshore cable easement. It lies immediately adjacent to a plantation on ancient woodland soils (PAWS) listed on the Ancient Woodland Inventory (i.e., it provides connectivity across local woodlands) and has been recognised of being of county importance through the application of the Sussex Wildlife Site Selection Criteria (West Sussex County Council, date unknown), therefore the conclusion of a **Significant** effect. It should be noted that the onshore cable corridor cannot be further reduced in this location as it is on a 90-degree bend immediately prior to entering an area of PAWS and reduced working width of 20m (see **Paragraph 2.4.4.5** for further details).

- 2.4.7.3 LACR-02 also crosses Poling Copse LWS, just to the east of Clay Lane. However, the crossing of this area of LWS is proposed to be crossed using a trenchless crossing (TC-31). As this construction technique is commonly used to avoid effects on sensitive habitats (including LWS) for linear projects across the UK, Poling Copse will not be expected to be degraded by temporary construction activities associated with onshore cable installation.
- 2.4.7.4 LACR-02 will result in the loss of PAWS (approximately 0.99ha) as the route progresses along the line of a track running between Lower Wepham Wood, Upper Wepham Wood, Tenantry Copse and Upper Oldfield Copse. These woodlands are dominated by 40/50-year-old even age beech stands grown for commercial timber production on ancient woodland soils. The boundaries of the PAWS (either side of the track) were reviewed within the report 'A revision of the Ancient Woodland Inventory for West Sussex' (Hume & Grose, 2010) and confirmed as appropriate (i.e., no revision required). This status was reviewed by RED in 2022 following a site visit and confirmed as appropriate, with any overlap of previously disturbed soils (i.e., due to track construction) being minimal. Ancient woodland indicators including bluebell, barren strawberry, wood spurge, yellow pimpernel, yellow archangel etc. were widespread and frequent also suggesting that ancient woodland soils were present within the boundary. The design of the Proposed Development in this area allows for a reduced temporary construction corridor width of 20m. However, due to the level of importance placed on ancient woodland (i.e., it is recognised as an irreplaceable habitat within national planning policy) loss will be unavoidable as a result of LACR-02. In the medium to long term, the creation of a permanent wayleave could have positive benefits due to the creation of more open space within the woodland that will benefit fauna species such as butterflies. This will, to some degree, support ride creation work being undertaken within the same agglomeration of PAWS to benefit pearl bordered fritillary butterflies¹⁰. However, the loss of irreplaceable habitat, regardless of extent in comparison to the local resource will constitute a **Significant** effect that will require the provision of bespoke compensation.
- 2.4.7.5 Along, and in close proximity to LACR-02 are areas that have been identified for potential compensation planting. Three areas have been identified in LACR-02, although not all of these may be required to deliver potential compensation planting for the loss of 0.99ha of PAWS. They have been provided in areas adjacent to current areas of PAWS that are linked to the area of loss. Planting and

¹⁰ Current habitat management for pearl bordered fritillary butterflies has been described by the landowner and local Natural England officer.

subsequent habitat management in these areas (and exclusion from commercial timber production) that currently support arable or improved pasture habitats, will provide high quality habitats in the long term. However, the conclusion of a **Significant** effect is still drawn as the ancient woodland soils for which PAWS are recognised will not be reconstituted.

- 2.4.7.6 There are other areas of ancient woodland along LACR-02, although these will be crossed by trenchless crossings (TC-31, TC-32 and TC-33). The first of these is known as Coots Dale and lies east of Crossbush Lane (TC-31), the second Upper Oldfield Copse (TC-32), whilst the other is known as Beech Copse lying to the west of Michelgrove Lane (TC-33). The trenchless crossing at TC-33 is likely to be outside of the footprint of Beech Copse but within 15m of its boundary. As this construction technique is commonly used to avoid effects on sensitive habitats (including ancient woodland and designated sites) for linear projects across the UK, these stands of ancient woodland will not be expected to be degraded by temporary construction activities associated with onshore cable installation.
- 2.4.7.7 Elsewhere within LACR-02, the habitats crossed are common with those associated with other onshore cable corridor options (PEIR Assessment Boundary, LACR-01a, LACR-01b and LACR-01c), being dominated by arable fields that are bounded by hedgerows or treelines. There are a number of ponds in close proximity to proposed ground works. Although none of these will be lost, a number are known to support great crested newts. Through the implementation of the embedded environmental measures described in **Appendix I**, the effects on hedgerows, treelines and legally protected or notable species will be less than those described within **Sections 23.10 to 23.14** in **Chapter 23** of the **PEIR** where these embedded environmental measures were not detailed. However, the conclusions drawn for these ecological features remains as reported in **Chapter 23** of the **PEIR**.

2.4.8 Transport

- 2.4.8.1 The introduction of LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 will result in a change in construction traffic numbers to those assessed within **Chapter 24: Transport, Volume 2** of the **PEIR**. As outlined in **Section 2.3**, following the introduction of LACR-01 and LACR-02, LACR-01 options LACR-01a and LACR-1c are considered to be the revised maximum design scenario which is further detailed in **Appendix J**. It is considered that the construction traffic generation impacts for the following design scenarios will be less than the new revised maximum design scenario and therefore fall within the assessment of the maximum design scenario for LACR-01a and LACR-01c:
- LACR-01 (LACR-01a and LACR-1b);
 - LACR-02 and LACR-1b; and
 - LACR-02 and LACR-01c
- 2.4.8.2 The impacts of the maximum design scenario LACR-01 (LACR-01a and LACR-1c) are assessed in detail in **Appendix J**.

- 2.4.8.3 For the maximum design scenario, **Appendix J** identifies four highways links requiring consideration in the assessment of effects in line with GEART (IEA, 1993). The highways links assessed include:
- Highways Link 5 – A259 West of Wick;
 - Highways Link 6 – A284, North of Wick;
 - Highways Link 7 – A284, Lyminster; and
 - Highways Link 26 – Wineham Lane, South of the A272.
- 2.4.8.4 The assessment of effects provided in **Appendix J** concludes for all four highway links that, following the implementation of embedded environmental measures⁴ (see **Appendix F**), the significance of residual effects is **negligible** which is **Not Significant** in EIA terms. A summary of residual effects table for the four highway links is provided in **Section 8 of Appendix J**. This is considered alongside the remaining overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) provided in the **Sections 24.10 to 24.15** within **Chapter 24** of the **PEIR** which are unchanged and remain valid.
- 2.4.8.5 LACR-02 includes nine additional PRoW receptors (2217, 2218, 3740, 2192_2, 2175, 2111, 2211_1, 2210 and 2180_1) in addition to those identified at PEIR stage. **Section 9 of Appendix J** provides additional details on each PRoW and the potential effects in relation to LACR-02. These additional PRoWs will be incorporated into the **Outline PRoWMP** provided alongside the DCO Application.
- 2.4.8.6 LACR-02 includes additional temporary construction and permanent accesses (see **Figure J-1 in Appendix J**) as follows:
- AA-21 – Temporary construction and permanent access to Michelgrove Lane;
 - AA-28 – Temporary construction and permanent access to Crossbush Road;
 - AA-29 – Temporary light construction and permanent access to Blakehurst Lane;
 - AA-30 – Temporary construction and permanent access to the A27;
 - AA-31 – Temporary construction and permanent access to Michelgrove Lane; and
 - AA-32 – Temporary construction and permanent access to Michelgrove Lane.
- 2.4.8.7 These temporary construction and permanent accesses have been reviewed and are appropriate for access requirements to LACR-02. **Section 10 of Appendix J** provides additional details on each temporary construction and permanent access associated with LACR-02. These temporary construction and permanent accesses will be reflected in the **Outline CTMP** provided along the DCO Application.
- 2.4.8.8 LACR-02 includes new permanent accesses (see **Table 2-1** and **Table 6-1** for descriptions of permanent accesses associated with LACR-02). The assumptions applied to the need and requirements for the permanent accesses remains as presented in the **Chapter 24 of the PEIR**.

- 2.4.8.9 The assessment of transport effects will be updated in line with the ES Assessment Boundary in the **outline PRowMP**, **outline CTMP**, and the ES submitted alongside the DCO Application.

2.4.9 Ground conditions

- 2.4.9.1 Ordnance Survey mapping indicates that LACR-02 traverses predominantly across agricultural fields and woodland with limited potential for sources of contamination to be present within the onshore cable corridor.
- 2.4.9.2 No new sources of contamination or minerals safeguarding interactions have been identified adjacent to the onshore cable corridor or temporary construction and permanent accesses.
- 2.4.9.3 In the western part of LACR-02, a temporary construction and permanent access (AA-28) is present off Blakehurst Lane. The Warningcamp Quarry Locally Important Geological Site (LIGS) will be approximately 145m to the north of the access and approximately 195m from the onshore cable corridor at its closest points. However, it is noted that no temporary construction activities will take place within the quarry itself and therefore, from a ground conditions perspective, there will be no impact on the LIGS.
- 2.4.9.4 Therefore, taking into account the implementation of the embedded environmental measures¹¹ (see **Appendix F**), which include a protocol for encountering unexpected contamination (C-72), there is considered no change to the overall assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9** to **25.15** within **Chapter 25** of the **PEIR** in relation to the onshore cable corridor and temporary and permanent accesses.

2.4.10 Historic environment

- 2.4.10.1 The historic environment baseline for LACR-02 is presented in **Appendix K, part K1**, with a gazetteer of known heritage records provided in **Appendix K, part K2**. Please see **Table 6-1** in **Section 6** for access descriptions relevant to LACR-02.

Effects arising through change to historic landscape character

- 2.4.10.2 The historic landscape character is considered comparable to that described in **Appendix 26.2** of the **PEIR** (see **Section 3.2, Appendix K, part K1**). LACR-02 intersects with areas of woodland characterised in the HLC as *Ancient Semi-natural* and *Replanted Ancient Semi-Natural*, including Coots Dale and part of Upper Oldfield Copse which will be crossed by trenchless crossings (TC-31 and TC-32 respectively), therefore retaining the woodland and avoiding impacts on HLC at these locations. Where LACR-02 follows a track through Upper Wepham Wood and Upper Oldfield Copse, the design of the Proposed Development allows for a reduced temporary construction corridor width of 20m. This will result in a permanent loss of a relatively narrow band of trees through the woodland along the construction corridor, which are identified by terrestrial ecologists as being of 40/50 years old, planted for the purpose of construction timber. This will have the

¹¹ See **Appendix F**: C-1, C-2, C-18, C-32, C-72, C-157, C-158, C-159, C-164, C-165, C-166 and C-169.

effect of widening the existing wayleave (following the same route shown on historic mapping) through this woodland.

- 2.4.10.3 Three areas have been identified in LACR-02 for potential compensation planting, although not all of these may be required. They have been provided in areas that are linked to the area of loss. An area of compensation planting at Upper Field Copse is shown on historic OS mapping as previously being woodland. Another area of compensation planting lying northwest of Angmering Park Farm, falls within the extent of the post medieval formal parkland at Angmering, which historic OS mapping indicates was also previously planted with trees. The third area, which lies on the edge of Oaken Copse, is a field forming part of an informal fieldscape resulting from piece meal enclosure with no coherent pattern.
- 2.4.10.4 Overall, LACR-02 is not expected to change the assessment outcomes or conclusions for the historic landscape character in **Sections 26.9 to 26.15** within **Chapter 26: Historic environment, Volume 2 of the PEIR**.

Direct effects on heritage assets

- 2.4.10.5 Known archaeological assets, and the potential for as yet unknown archaeological assets, within LACR-02 are identified in **Section 4** and **Table K1-17, Appendix K, part K1**, together with an indication of their heritage significance (sensitivity).
- 2.4.10.6 There are no extant built heritage assets within LACR-02.
- 2.4.10.7 Where LACR-02 intersects with ANAs, these are detailed in **Table K1-3, Appendix K, part K1**.
- 2.4.10.8 Within ANA SDNPA 030, LACR-02 (AA-32) intersects with the scheduled remains of a Itford Hill style settlement (1017446) and associated field system on the southern slope of a chalk hill, dated to the Late Bronze Age. Remains of Neolithic settlement activity were also recorded within the scheduled area. LACR-02 AA-31/AA-32 traverses Barpham Hill, where other barrow sites are known (though none recorded in the LACR-02 AA-31/AA-32 boundary).
- 2.4.10.9 The projected route of a Roman road passes adjacent to LACR-02 (AA-30) broadly along that of the A27. Slight earthwork remains of Roman lynchets (MWS8478) on southern slopes of Harrow Hill, crossed by LACR-02 (AA-32). LACR-02 falls within ANAs where evidence for Roman occupation has been previously identified.
- 2.4.10.10 LACR-02 (AA-31/AA-32) lies adjacent to the scheduled Upper Barpham Farm DMV (1015882) and LACR-02 (AA-32) crosses an area where there are slight earthwork remains characteristic of a medieval rectangular enclosure (MWS8478) on southern slopes of Harrow Hill. Within LACR-02, there is evidence for post medieval industrial activity with numerous historic extraction pits and a former brick yard (at LACR-02 AA-30) and known lime kiln sites within the study area. Whilst quarry pits present heritage assets of very low heritage significance, they are also sources of truncation which will have impacted the survival of archaeological remains predating quarrying activity, if present. Within LACR-02, on the east side of Blakehurst Lane (approx. TQ 04689 06540), there is potential for remains of former building/s (as shown on 1840s tithe mapping) and other remains associated with a historic farmstead, *Old Blakehurst*. LACR-02 passes through

the historic parklands of Angmering Park (MWS3066 and HWS23913) and Michelgrove (MWS3065), where there is potential for historic parkland features. Where LACR-02 crosses the woodland around Angmering Park, there is a network of linear features identified on the LiDAR data which appear to relate to former field boundaries and trackways. These linear features generally terminate at the trackway along which LACR-02 traverse, though one appears to cross it (LDr_425). LACR-02 is located very closely to site of an Auxiliary Unit Operational Base at in Upper Wepham Wood (MWS8192), surrounding which are numerous linear features identified on the LiDAR data of unknown date.

- 2.4.10.11 Further information is required to more accurately determine the nature, form and condition of remains that may be present within LACR-02.
- 2.4.10.12 The physical impacts to known or potential archaeological remains along LACR-02 accesses can be expected to be limited to where construction of a new access or where adaption of an existing trackway is required.
- 2.4.10.13 Overall, LACR-02 has archaeological potential for all periods, ranging from very low to high. As summarised in **Paragraphs 2.3.10.4 to 2.3.10.20** of the PEIR SIR and in **Appendix K, part K1**, each LACR may impact archaeological remains with heritage significance ranging from very low to high. The magnitude of change could be up to high, though given the width of the onshore construction corridor in relation to the extent of the known and potential archaeological assets, a low to medium magnitude of change is more likely. Whilst this could lead to potentially significant adverse effects, which will be permanent, further information obtained by field investigations along with proposed embedded environmental measures (**Appendix F**), described in C-79, together within the avoidance of areas of sensitivity (or heritage significance) (C-6), will seek to limit the magnitude and overall effect on archaeological assets to an acceptable level being **low to medium adverse**, which will be **Not Significant** in EIA terms. As per PEIR (**Table 26-8, Chapter 26 of the PEIR**), any disturbance of archaeological heritage assets within LACR-02 will occur during the construction phase of the Proposed Development. No further effects are anticipated during the operation and maintenance phase.

Effects arising through change to setting of heritage assets

- 2.4.10.14 LACR-02 introduces new designated heritage assets not previously identified within the baseline in **Appendix 26.2 of the PEIR** (see **Table K3-1, Appendix K, part K3**). This has the potential to change the assessment outcomes and/or conclusions for some designated heritage assets (e.g., conservation areas, listed buildings, scheduled monuments) identified at PEIR (**Sections 26.9 to 26.15** within **Chapter 26 of the PEIR**). However, there are no designated heritage assets identified within the boundary of LACR-02.
- 2.4.10.15 **Table K3-1, Appendix K, part K3** lists all of the potential effects arising through the change to setting of heritage assets associated within the construction phase of LACR-02. An indication is provided of the range of magnitude of change and heritage significance (sensitivity) definitions for each potential effect based on the definitions provided within **Section 26.8 in Chapter 26 of the PEIR**. Overall, during the construction phase there is potential for a very low to low magnitude of change to receptors of high heritage significance, resulting in **minor to moderate adverse**

effects, which could be **Significant**. The magnitude of change, and hence the significance of potential effects, have been assessed on the assumption that embedded environmental measures have been implemented as part of the Proposed Development. A precautionary approach has been taken in the identification of potential effects within the PEIR SIR assessment, reflecting the level of detail available for the construction phase. It is anticipated that as detail of the construction sequence is further refined, the potential effects arising through change to setting identified at PEIR SIR will be reduced. Where indirect effects through changes to setting are identified during the construction phase, these are expected to be short-term and temporary.

- 2.4.10.16 Development within LACR-02 is unlikely to impact the setting of other designated heritage assets within the study area (see **Table K2-1, Appendix K, part K2**) due to the nature of the assets, topography, intervening planting and built infrastructure, and the relative distance from LACR-02. No effects are anticipated and therefore they will not be considered for assessment in the ES.

2.4.11 Water environment

- 2.4.11.1 Additional water environment receptors within the vicinity of LACR-02 have been identified and assessed in **Tables L-1 to L-4 of Appendix L. Tables L-5 to L-7 of Appendix L** subsequently list all of the potential effects on the water environment receptor groups associated with the construction, operation and maintenance, and decommissioning phases associated with LACR-02. An indication is provided of the range of magnitude of effect and the value based on definitions provided within **Section 27.8 in Chapter 27 of the PEIR**. Overall, there is potential for negligible to medium magnitude of change effects towards receptors of very low to high value, resulting in predominantly negligible to minor (**Not Significant**) effects and one minor to major adverse effect, which could potentially be **Significant**.
- 2.4.11.2 The proposals for trenchless crossings along sections of LACR-02 and the potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a Low or Medium magnitude of effect and this could be potentially significant. At this preliminary stage, there is uncertainty over the level of risk associated with LACR-02 and significant adverse effects on the underlying aquifer, public water supplies (e.g., Angmering and Patching public water supply) and other features including the Decoy, Angmering Park Stud Farm and Long Furlong Barn PWSs cannot be ruled out at this preliminary stage of assessment. (see **Appendix L**).
- 2.4.11.3 On this basis, a detailed Hydrogeological Risk Assessment will be prepared to support the Water environment chapter in the ES. This will be undertaken to further understand the potential relationship between LACR-02 and the public water supply and other potential 'receptors'. This will be supported by a site visit and conceptual cross sections to establish relative elevations and pathway linkages. This will assist in establishing whether there is a source - pathway - receptor link between the LACR-02, the public water supply and/or other water features in the area and will consider additional embedded environmental measures where necessary to minimise potential adverse water quality effects.

2.4.12 **Major accidents and disasters**

2.4.12.1 In relation to major accidents and disasters, LACR-02 is largely comparable to the original PEIR Assessment Boundary. It does not run through the consultation distances of any new Control of Major Accident Hazard (COMAH) facilities, nor does it introduce any significant new hazards or receptor populations. LACR-02 does not significantly alter the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

2.4.13 **Greenhouse gas assessment**

2.4.13.1 The routes associated with LACR-02 (including LACR-02, LACR-01b and LACR-01c) do not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the **PEIR**.

3. Alternative Cable Routes

3.1 Description of Alternative Cable Routes

- 3.1.1.1 As outlined in **Section 1.3**, seven Alternative Cable Routes (ACRs) (ACR-01 – ACR-07) to the original PEIR Assessment Boundary have been included since publication of the PEIR (RED, 2021) in July 2021.
- 3.1.1.2 The ACRs described have arisen as a result of a combination of statutory consultation feedback received on the PEIR from local community members, statutory bodies and others. Feedback has also been considered from ongoing stakeholder and landowner engagement. The ACRs have also considered the outcomes of further surveys and engineering design investigations undertaken since the PEIR was published (e.g., geophysical surveys in areas of archaeological potential within the original PEIR Assessment Boundary). These inputs have been analysed and have contributed to the design change process.
- 3.1.1.3 The locations of the seven ACRs are shown in **Figures 6 to 24, Appendix A**. Each ACR is shown on its own individual page with the exception of ACR-04 where the options are shown across multiple pages.
- 3.1.1.4 The statutory and non-statutory environmental features relevant to each ACR are presented in **Appendix B**, with two figures per ACR to present the various environmental features.

Table 3-1 Description of Alternative Cable Routes

ID	Description
ACR-01 (Figure 6, Appendix A)	<p>ACR-01 is located approximately 270m to the north-west of Littlehampton, starting adjacent to the original PEIR Assessment Boundary south of the railway. ACR-01 avoids areas where geophysical surveys have revealed potential archaeological finds.</p> <p>ACR-01 is approximately 750m in length and follows the eastern edge of a historic landfill and includes an additional area further to the west required to accommodate temporary soil storage during the construction phase. A trenchless crossing (TC-01) is required under the Chichester to Worthing railway line and Black Ditch. ACR-01 then continues north-east for approximately 450m and crosses the Chichester to Worthing railway line a second time by trenchless crossing (TC-02), where it re-joins the original PEIR Assessment Boundary.</p> <p>ACR-01 requires an additional temporary construction and permanent access (AA-03). AA-03 uses an existing farm access within the PEIR Assessment Boundary and extends to the west, using a private at-</p>

ID	Description
ACR-02 (Figure 8, Appendix A)	<p>grade crossing of the railway line. AA-03 continues parallel to the railway line for approximately 500m to join ACR-01.</p> <p>ACR-02 commences approximately 150m to the north of Littlehampton running past the south of Lyminster to the east of the original PEIR Assessment Boundary. ACR-02 avoids commercial agricultural interests and potential archaeological constraints.</p> <p>ACR-02 is approximately 3km in length and proceeds east across agricultural fields for approximately 1.4km, including a trenchless crossing of the A284 (TC-03). It also includes a trenchless crossing of the proposed Lyminster Bypass (TC-04), which is a separate project expected to be complete prior to the construction of Rampion 2. ACR-02 then continues east and then north along field boundaries for approximately 1.6km, including a trenchless crossing of the A27 (TC-05).</p> <p>ACR-02 overlaps with an additional temporary construction access (AA-04) from the A284 within the ACR-02 area. AA-04 is located within the footprint of ACR-02, however these additions/modifications are exclusive of each other. AA-04 will only be taken forward as a standalone temporary construction access if ACR-02 is not progressed.</p> <p>AA-05 provides alternative temporary construction and permanent access to ACR-02 from the A284 Lyminster Road and runs along an existing track.</p> <p>AA-06 provides a permanent access approximately 900m southeast from Crossbush and runs along an existing track.</p>
ACR-03 (Figure 10, Appendix A)	<p>ACR-03 is located approximately 640m east of Crossbush and commences south of Crossbush Lane, east of the original PEIR Assessment Boundary. ACR-03 avoids underground utilities to the northern sections of Warningcamp C route option (the most eastern potential onshore cable corridor option that crosses the A27 south of Crossbush as considered in the original PEIR).</p> <p>ACR-03 is approximately 400m in length. ACR-03 includes a trenchless crossing (TC-06) under Crossbush Lane, an existing track and the western edge of approximately 150m of Ancient Woodland. ACR-03 continues north-west under Clay Lane via trenchless crossing (TC-07) to re-join the original PEIR Assessment Boundary.</p>
ACR-04 (Figure 13 Appendix A)	<p>ACR-04 is located approximately 330m south-east of Wepham and commences approximately 750m east of Warningcamp, to the east of the original PEIR Assessment Boundary. ACR-04 consists of additional areas that have been sub-divided to provide options through</p>

ID	Description
	<p>this highly constrained area. The different areas are described under the headings below and illustrated in Figure 13.</p>
	<p>Within the original PEIR Assessment Boundary there will be two additional trenchless crossings of the Warningcamp to New Down Local Wildlife Site (LWS) (TC-08 and TC-09). These are introduced to reduce potential impacts to calcareous grassland within the Warningcamp Hill to New Down LWS. Where these are applicable to the options described below, the relevant TC is referenced.</p>
	<p>All ACR-04 alternatives described below rely on the AA-08 being included in the design. AA-08 is a temporary construction and permanent access and has been described and the environmental review summary provided in Section 5 of this PEIR SIR.</p>
	<p>The following alternatives are to reduce potential impacts on a private nature project which forms part of an environmental stewardship scheme, and a commercial business:</p>
	<p>ACR-04 a & b (see Figure 13)</p>
	<p>ACR-04 a & b includes one trenchless crossing (TC-08) to the base of the valley at the Warningcamp to New Down LWS. The route then turns east continuing approximately 500m along the route of the Monarch's Way. An additional trenchless crossing (TC-10) will be undertaken to avoid impacts on the Ancient Woodland (The Knell). The additional area continues approximately 2.8km northeast following the edges of the same fields, and then re-joining, the original PEIR Assessment Boundary.</p>
	<p>A temporary closure and diversion of the Monarch's Way will be required with the associated additional area to accommodate the diversion included to the south, on the valley side.</p>
	<p>ACR-04 a & c (see Figure 13)</p>
	<p>This additional area is as per the description of ACR-04 a & b up to and including the trenchless crossing (TC-10) of the Ancient Woodland. At this point where 'b' proceeds northeast, the additional area covered by 'c' then continues north, crossing a field for approximately 500m before re-joining the original PEIR Assessment Boundary.</p>
	<p>The same additional area for the diversion of the Monarch's Way will be required.</p>
	<p>ACR-04 d & b (see Figure 13)</p>
	<p>This route follows the original PEIR Assessment Boundary with trenchless crossings (TC-08 and TC-09) of the Warningcamp to New Down LWS. The additional area diverts from the PEIR Assessment Boundary south of Wepham to continue approximately 800m northeast</p>

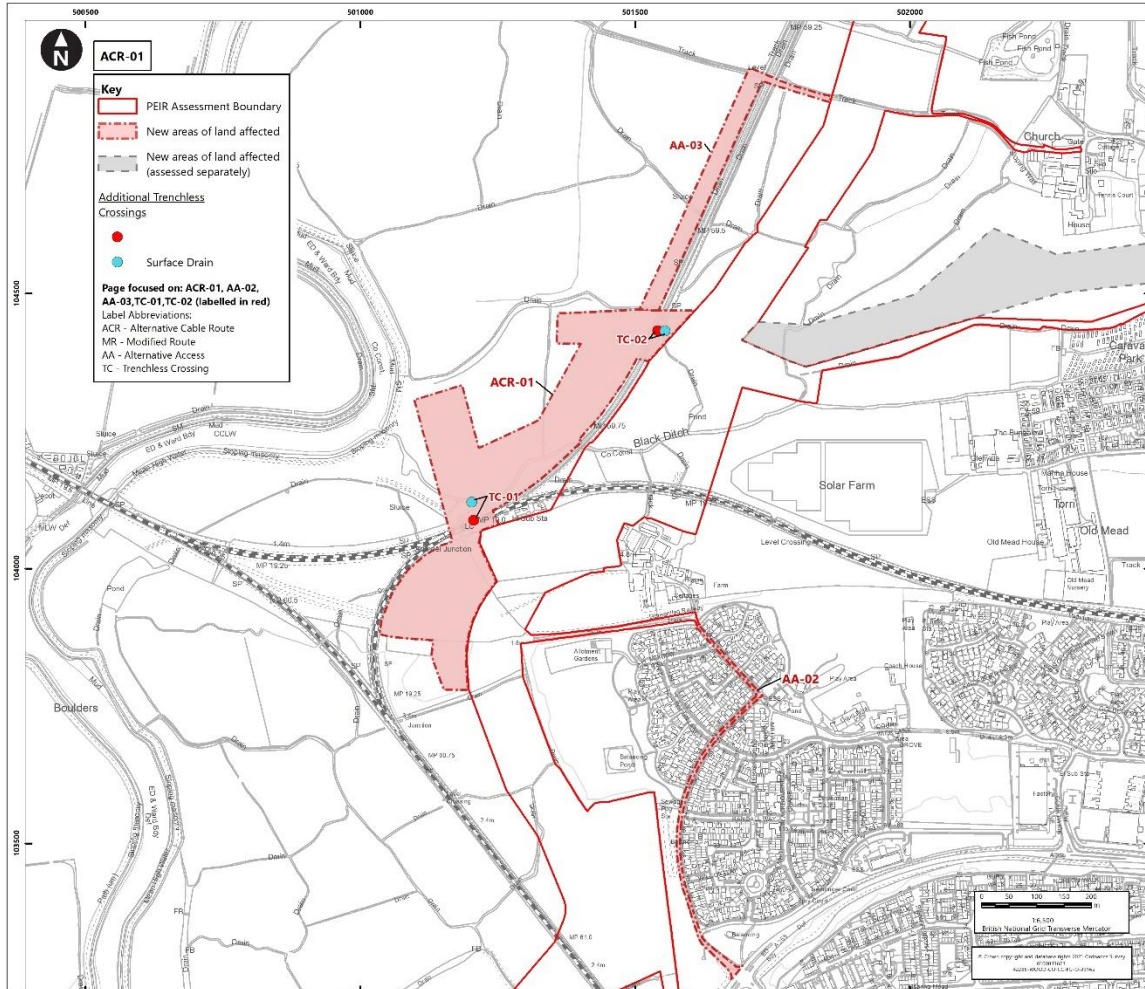
ID	Description
	<p>to reach the edge of the field. The additional area continues approximately 2.1km northeast to re-join the original PEIR Assessment Boundary by following the edges of the fields in the original PEIR Assessment Boundary.</p>
<p>ACR-05 (Figure 15, Appendix A)</p>	<p>ACR-05 is located approximately 2.1km north-east of Burpham, to the south of the original PEIR Assessment Boundary. ACR-05 avoid impacts on an environmental stewardship project.</p> <p>ACR-05 is approximately 1.1km in length and crosses two agricultural fields. ACR-05 is adjacent to an area of Ancient Woodland, south of the onshore cable corridor, for which there is a minimum 25m buffer. ACR-05 re-joins the original PEIR Assessment Boundary via a trenchless crossing (TC-11) of a (separate) shelter belt that provides habitat connectivity between woodland blocks to the south and north through the largely arable landscape.</p>
<p>ACR-06 (Figure 22, Appendix A)</p>	<p>ACR-06 commences approximately 180m south of Ashurst running west of Horsham Road for approximately 750m and alongside Spithandle Road for approximately 700m. ACR-06 is to the east of the original PEIR Assessment Boundary. ACR-06 avoids impacts on a private nature conversation scheme and engineering constraints.</p> <p>ACR-06 includes a trenchless crossing of Spithandle Lane and Calcot Wood (TC-13) and of the B2135 and River Arun tributary (TC-14) where ACR-06 re-joins the original PEIR Assessment Boundary. ACR-06 includes an additional temporary construction and permanent access from Spithandle Lane.</p>
<p>ACR-07 (Figure 24, Appendix A)</p>	<p>ACR-07 is located approximately 220m east of Bines Green at its closest point. ACR-07 commences approximately 650m south of Bines Green and approximately 550m northeast of Ashurst. ACR-07 is north-east of the original PEIR Assessment Boundary. ACR-07 avoids new infrastructure with planning permission and is in response to further engineering considerations.</p> <p>ACR-07 is approximately 1.1km in length and crosses agricultural fields, including a trenchless crossing of a farm access track and mature treeline (TC-15). ACR-07 continues north-east to then cross the River Adur via a trenchless crossing (TC-16), before re-joining the original PEIR Assessment Boundary.</p>

3.2 Environmental review of Alternative Cable Routes

- 3.2.1.1 The environmental review of the ACR-01 to ACR-07 are provided for each environmental aspect below. All assessments for the ES Assessment Boundary will be updated and presented in the ES.
- 3.2.1.2 The following environmental review for ACRs has considered the implementation of existing PEIR and new/updated embedded environmental measures, which are specified within each aspect section and noted in **Appendix F**. For the overall existing PEIR assessment outcomes and conclusions for each aspect, please see the PEIR summary of residual effects tables set out in **Appendix G**.

3.3 Alternative Cable Route -01 (ACR-01)

Graphic 3-1 ACR-01 (see Figure 6, Appendix A)



3.3.1.1 **Figures 7, 54 and 101 in Appendix B** outline the key environmental features relevant to ACR-01 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.3**.

ACR-01 Environmental Review Overview

No additional sensitive receptors are introduced as a result of ACR-01, with the exception of some designated heritage assets. Some changes in the magnitude of impact to sensitive receptors will be experienced by terrestrial ecology. No new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR.

3.3.2 Socio-economics

3.3.2.1 ACR-01 does not introduce any new socio-economic receptors and has no impact on onshore recreation and offshore recreation. Therefore, considering the implementation of embedded environmental measures¹², ACR-01 does not change the assessment outcomes and conclusions of the assessments of economy, tourism economy and land and water-based recreation (see **Table G-1** in **Appendix G**), presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR.

3.3.2.2 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

3.3.3 Landscape and visual impact

3.3.3.1 ACR-01 (southeast of the railway junction) extends the PEIR Assessment Boundary approximately 0.15km further west to the railway line, across open fields with some scrub/scattered trees and up to three field boundaries that may contain limited remnant hedgerow. Construction works could result in the loss of some of these landscape elements, although they are not key features of the Arun Valley landscape character and are unlikely to result in significant levels of landscape effects. ACR-01 (when north of the railway junction) extends 1km further northwest from the railway line across open fields and drainage ditches. Of note is the inclusion of further scrub/scattered trees associated with the railway line and the Black Ditch. Both of these areas will be subject to a trenchless crossing that will preserve these landscape elements.

3.3.3.2 There will be no change to the visual receptors likely to be affected, although ACR-01 will bring the red line boundary to the west of the railway line affecting the transient views experienced by rail passengers whilst travelling at close range with

¹² See **Appendix F: C-1, C-3, C-4, C-7, C-18, C-19, C-20, C-22, C-26, C-32, C-33, C-34, C-35, C-43, C-46, C-53, C-56, C-66, C-85, C-100, C-101, C-128, C-161, C-162, C-164 and C-168.**

limited screening from existing vegetation (which will be retained) along the railway line. There will also be more open and elevated views from the footpath (PRoW 206) along the west bank of the River Arun at approximately >1.8km distance, where previously views towards the construction works will be partly screened by the railway line.

- 3.3.3.3 Considering the implementation of embedded environmental measures¹³, ACR-01 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-2 – G-7** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2** of the PEIR. The LVIA will be updated in line with the ES Assessment Boundary.

3.3.4 Air quality

- 3.3.4.1 ACR-01 does not introduce any new residential receptors. ACR-01 will therefore not change the outcome of the construction dust assessment (**Section 20.9**) or the overall assessment outcomes and conclusions (see **Table G-8** in **Appendix G**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2** of the PEIR.
- 3.3.4.2 ACR-01 includes two trenchless crossings (TC-01 and TC-02) which are no closer to sensitive receptors than those assessed within the construction plant modelling presented in the PEIR. Whilst the introduction of trenchless crossings and associated compounds as part of ACR-01 may result in potential changes in emissions calculations in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4** of the PEIR, this does not change the overall assessment outcomes and conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20** of the PEIR.
- 3.3.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.3.5 Soils and agriculture

- 3.3.5.1 ACR-01 does not introduce any new soils and agriculture receptors. The 1:250,000 Ministry of Agriculture Fisheries and Food (MAFF) provisional Agricultural Land Classification Map of England and Wales mapping shows that the Agricultural Land Classification (ALC) grade within ACR-01 is Grade 3. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-01 introduces an additional area of approximately 11.87ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2** of the PEIR

¹³ See **Appendix F: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C-29, C-33, C-81, C-82, C-85, C-100, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-174, C-183, C-193, C-196, C-199, C-202, C-204, C-211, C-226, C-239, C-240, C-308 and C-327.**

conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).

- 3.3.5.2 The assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha. The additional land in ACR-01 will increase this total by 10.47ha, which equates to a 5.06% increase. This is a small additional area of ground potentially subject to temporary disturbance during construction. As there is no change to the environmental receptors or the embedded environmental measures¹⁴, ACR-01 does not change the assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary.

3.3.6 Noise and vibration (onshore)

- 3.3.6.1 ACR-01 does not introduce any new environmental receptors. Those already assessed within the PEIR remain the closest to the onshore cable corridor, at a distance of approximately 120m. Therefore, the additional area for onshore cable trenching does not change the overall noise and vibration assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**.
- 3.3.6.2 ACR-01 includes trenchless crossings (TC-01 and TC-02) which are no closer to noise sensitive receptors than those assessed within the noise assessment at PEIR stage. Therefore, although ACR-01 includes new trenchless crossings, considering the implementation of embedded environmental measures, ACR-01 does not change the overall assessment outcomes and conclusions of the trenchless crossings noise assessment presented in **Section 22.9** within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary.
- 3.3.6.3 ACR-01 includes a temporary construction access (AA-03), though this is at least 450m from the nearest noise sensitive receptor (St Marys Magdalene's Church) and therefore unlikely to result in significant effects. This does not change the overall assessment outcomes and conclusions of the assessment of temporary and permanent accesses in **Section 22.9** within **Chapter 22** of the **PEIR**. The assessment of temporary and permanent accesses will be updated in line with the ES Assessment Boundary.
- 3.3.6.4 Therefore, considering the implementation of embedded environmental measures¹⁵, ACR-01 does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling

¹⁴ See **Appendix F**, C-1, C-4, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-28, C-79, C-80, C-81, C-82 C-115, C-133, C-157 and C-183.

¹⁵ See **Appendix F**: C-22, C-26, C-33 and C-160.

will be updated in line with the ES Assessment Boundary in the noise and vibration assessment.

3.3.7 Terrestrial ecology and nature conservation

- 3.3.7.1 ACR-01, and the associated access route AA-03, lies largely within an area of coastal and floodplain grazing marsh (a Habitat of Principal Importance (HPI)). This habitat is also functionally linked to the Arun Valley Special Protection Area (SPA) and Ramsar site as it provides areas used by designated features of these sites (e.g., certain wildfowl) for feeding/loafing, although it lies outside any designation boundary. The additional area of HPI is west of the railway, closer to the river and has a landform that includes areas where water will pool. It is therefore likely to be more valuable to wildfowl than habitat to the east of the railway in this location which is more uniform in topography. ACR-01 has high biodiversity interest. However, the embedded environmental measures described in the PEIR (particularly C-103 and C-117) ensure that the potential effects associated with disturbance of wildfowl using the grazing marsh and the temporary habitat loss that will be associated with construction works, is minimised.
- 3.3.7.2 The construction schedule at ACR-01 will be tailored to avoid works during the wintering period when water birds are present and under most pressure from adverse weather conditions. This will largely avoid the potential to disturb or displace wildfowl feeding or loafing in this area of the Arun Valley. Restoration of the habitats is expected to be relatively straightforward as the grasslands present have already been modified through farming practice and can therefore be established using similar methods. Furthermore, the extent of suitable feeding habitat in the immediate surrounds suggests any small temporary loss of feeding resource will not alter the condition of individual birds.
- 3.3.7.3 Considering the implementation of embedded environmental measures¹⁶ (also see **Appendix I** for further details) the addition of ACR-01 does not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) provided in **Sections 23.10** to **23.14** within **Chapter 23: Terrestrial ecology and nature conservation, Volume 2** of the PEIR.

3.3.8 Transport

- 3.3.8.1 ACR-01 includes a temporary construction and permanent access AA-03 for construction traffic which crosses the railway network at a grade level crossing. Further discussions with Network Rail are being undertaken to understand the management of this crossing during the construction phase and this will be outlined in the **outline Construction Traffic Management Plan (CTMP)** provided alongside the DCO Application.
- 3.3.8.2 ACR-01 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24: Transport, Volume 2** of the PEIR.

¹⁶ See **Appendix F** for relevant commitments namely C-21 C-64, C-76, C-103, C-117, C-135 and C-199.

3.3.8.3 Considering the implementation of embedded environmental measures¹⁷, ACR-01 does not change the overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24** of the **PEIR**.

3.3.8.4 The assessment of transport effects will be updated in line with the ES Assessment Boundary in the **outline CTMP** and presented the ES.

3.3.9 Ground conditions

3.3.9.1 ACR-01 includes the majority of the historical Brookbarn Farm Landfill (located to the south and east of the railway lines and which is recorded to have taken inert waste) and introduces a new trenchless crossing (TC-01) on the north-eastern corner of the former landfill boundary to cross under the railway line to the north. However, it is noted that the onshore cable trench itself will likely remain on the very eastern edge of the landfill boundary with the majority of the landfill area to the west of the cable trench and up to the railway line to the west only used for surface construction activities and temporary soil storage. Therefore, considering the implementation of the embedded environmental measures¹⁸, there is no change to the assessment outcomes and conclusions (see **Table G-13 in Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

3.3.10 Historic environment

3.3.10.1 ACR-01 and AA-03 do not change the assessment outcomes or conclusions for those designated heritage assets (for example, Conservation Areas, listed buildings, scheduled monuments) in **Sections 26.9 to 26.15** within **Chapter 26: Historic environment, Volume 2** of the **PEIR**. Whilst designated heritage assets are identified within 1km of ACR-01 and AA-03 in addition to those at PEIR stage, due to the nature of the assets, topography, intervening planting and built infrastructure, and the relative distance from ACR-01 and AA-03, development within ACR-01 and AA-03 is unlikely to impact the setting of other heritage assets and therefore no additional effects are anticipated.

3.3.10.2 Historic landfill which extended across the south of ACR-01, together with the railway line, are expected to have significantly truncated buried deposits. The survival of any deposits of archaeological interest is therefore considered to be very low within these areas of ACR-01. However, there will still remain the potential for deeper palaeoenvironmental remains, which may be impacted during the construction phase. This was identified at PEIR stage and will not change the assessment outcome or conclusions as presented in **Table 26-23** within **Chapter 26** of the **PEIR**.

3.3.10.3 ACR-01 and AA-03 encounter some isolated linear cropmarks visible on modern satellite imagery. These are non-designated receptors and are located within fields

¹⁷ See **Appendix F: C-1, C-2, C-18, C-32, C-157, C-158, C-159, C-164, C-165, C-166 and C-169**.

¹⁸ See **Appendix F: C-6, C-8, C-14, C-15, C-24, C-31, C-69, C-70, C-71, C-76, C-116, C-143, C-149, C-150, C-151, C-153 and C-167**.

north of the railway line and appear indicative of former field boundaries, though it has not been possible to correlate these with boundaries shown on historic ordnance survey or tithe maps. One of these linear cropmarks within AA-03 is bisected by the existing railway line. Another linear cropmark appears to exist as an earthwork which crosses ACR-01 east-west and is broadly parallel with an existing ditch. This cropmark may represent a former trackway or ditch leading to the River Arun. A site visit is required to determine the presence of earthworks which may have heritage interest. These types of features are typically expected across the historically changing rural landscape, as identified in **Section 26.6** within **Chapter 26 of the PEIR** and are considered to have low heritage significance. Construction within ACR-01 is likely to directly impact these archaeological receptors with an anticipated magnitude of change no greater than medium. The resulting effect will be **Not Significant**.

- 3.3.10.4 ACR-01 and AA-03 do not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions for these receptor types as presented in **Sections 26.6 and 26.9 to 26.15** within **Chapter 26 of the PEIR**. ACR-01 and AA-03 do not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16**.
- 3.3.10.5 There are no other changes to the overall assessment outcomes or conclusions¹⁹ provided in **Sections 26.9 to 26.15** within **Chapter 26 of the PEIR**. The assessment of archaeological assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

3.3.11 Water environment

- 3.3.11.1 The area within ACR-01 includes the Black Ditch (West Sussex) Main River and an unnamed minor tributary which is an Ordinary Watercourse, both identified as environmental receptors in **Chapter 27: Water environment, Volume 2 of the PEIR. Paragraphs 27.6.14, 27.6.15 and Table 27.6** already identify other water environment receptors including Black Ditch (West Sussex) (GB107041012890), Worthing Chalk GB40701G505300 WFD water bodies and an unlicensed Private Water Supply (PWS) abstraction, Brookbarn House. Therefore, ACR-01 does not introduce new water environment receptors beyond those identified in the **Chapter 27 of the PEIR**.
- 3.3.11.2 As noted, under the ground conditions section for ACR-01 in this report (**Paragraph 3.3.9.1**), whilst there is some interaction with the former landfill boundary, the onshore cable trench will likely remain on the very eastern edge with the majority of the landfill area only used for surface construction activities and the temporary soil storage. In the event of interaction with the former landfill across ACR-01 then unexpected contamination protocol and pollution prevention plans will be implemented to minimise risks from any unexpected ground contamination towards the water environment at this location. Therefore,

¹⁹ See **Table G-14** in **Appendix G**, noting **Appendix F** for updated commitments C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-36, C-37, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

considering the implementation of embedded environmental measures²⁰, ACR-01 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the **PEIR**.

3.3.12 **Major accidents and disasters**

3.3.12.1 ACR-01 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

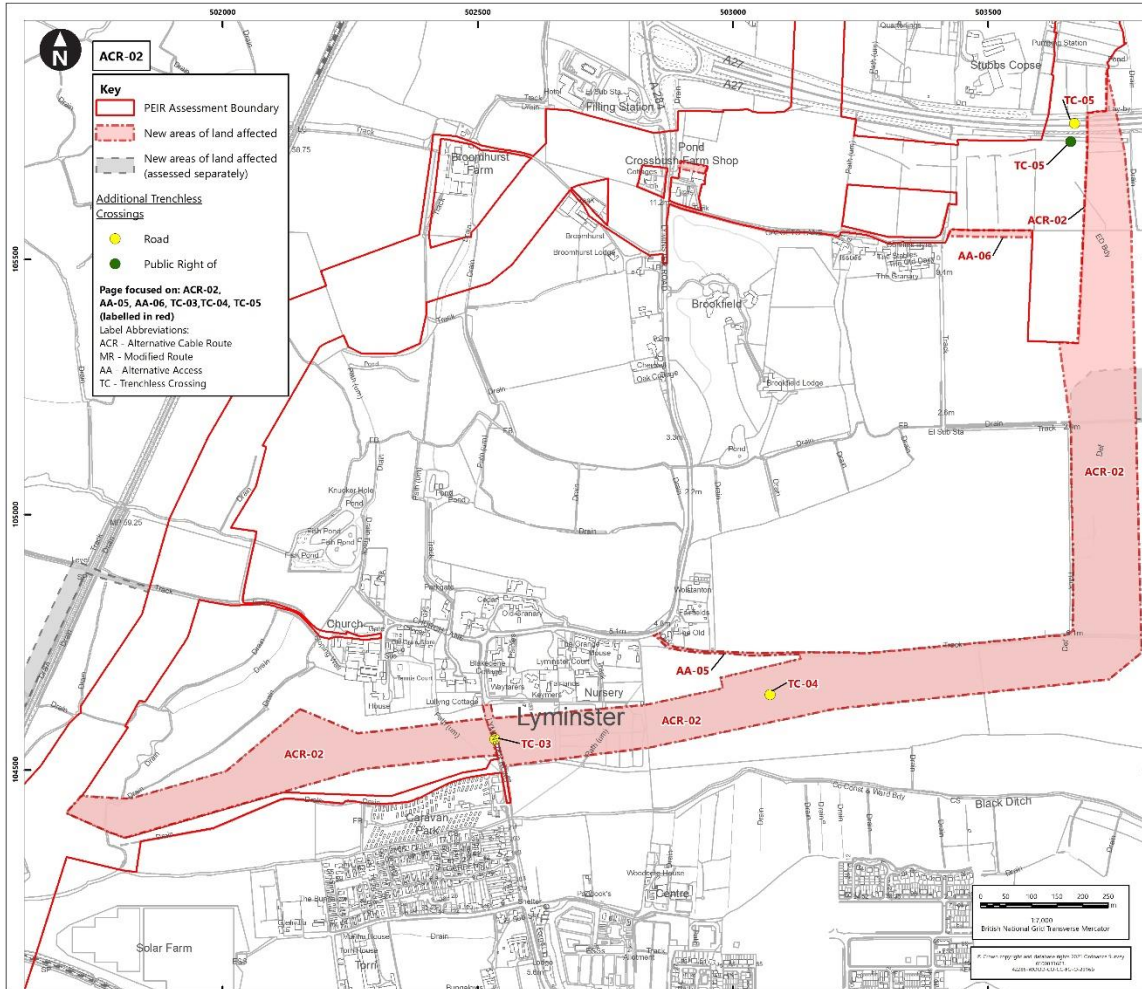
3.3.13 **Greenhouse gas assessment**

3.3.13.1 ACR-01 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the **PEIR**.

²⁰ See **Appendix F**: C-3, C-6, C-7, C-8, C-10, C-11, C-13, C-14, C-15, C-19, C-20, C-21, C-24, C-25, C-27, C-28, C-29, C-30, C-33, C-64, C-69, C70, C-71, C-73, C-74, C-75, C-76, C-77, C-78, C-116, C-117, C-120, C-121, C-122, C-123, C-124, C-125, C-126, C-127, C-128, C-129, C-130, C-131, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-153, C-167, C-179, C-181 and C-182 .

3.4 Alternative Cable Route -02 (ACR-02)

Graphic 3-2 ACR-02 (see Figure 8, Appendix A)



3.4.1.1 **Figures 9, 56 and 103 in Appendix B** outline the key environmental features relevant to ACR-02 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.4.**

ACR-02 Environmental Review Overview

Additional sensitive receptors introduced as a result of ACR-02 include socio-economics, air quality, noise and vibration, transport and LVIA receptors. Some changes in the magnitude of impact to sensitive receptors will be experienced by historic environment and LVIA receptors. Considering the implementation of embedded environmental measures, new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR for LVIA only. These significant effects are likely to be for a temporary period.

3.4.2 Socio-economics

3.4.2.1 ACR-02 and AA-05 introduce three additional receptors comprising bridleway 2163 (frequently used by walkers and cyclists), and footpaths 2163_1 and 2165. The alternative and modifications here have the potential to impact on access to and enjoyment of onshore recreation activity for these receptors. However, considering the implementation of embedded environmental measures²¹ (e.g., Public Rights of Way Management Plan, C-202, including shared-route traffic management provisions), ACR-02 and AA-04 do not change the assessment outcomes or conclusions of the assessments of economy, tourism economy and land and water-based recreation (see **Table G-1** in **Appendix G**), presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR**. The socio-economic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

3.4.2.2 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

3.4.3 Landscape and visual impact

3.4.3.1 ACR-02 introduces an option to the original PEIR Assessment Boundary that will pass through arable fields and to the south and east of Lyminster before progressing north towards the A27 where it will re-join the boundary. ACR-02 includes three trenchless crossings at the A284 (TC-03), the planned Lyminster Bypass (TC-04) and the A27 (TC-05) and will preserve landscape elements including mature trees and hedgerow features.

3.4.3.2 ACR-02 passes through a landscape receptor located to the east of the A284 not previously directly affected (SC11: Littlehampton and Worthing Fringes landscape character type). This will result in temporary effects on landscape character and

²¹ See **Appendix F**: C-1, C-3, C-4, C-7, C-18, C-19, C-20, C-22, C-26, C-32, C-33, C-34, C-35, C-43, C-46, C-53, C-56, C-66, C-85, C-100, C-101, C-128, C-161, C-162, C-164, C-168 and C-202.

landscape elements including arable fields, paddocks and hedgerows as well as some urban fringe development at Wick. Landscape elements include two streams, and up to four areas of hedgerow/scrub woodland with trees dividing large arable fields. SC11: Littlehampton and Worthing Fringes landscape character type is sub-divided into two landscape character areas: 40) Lyminster-Angmering Coastal Plain and 41) Black Ditch Rife. Although ACR-02 will affect new and different parts of the Lyminster-Angmering Coastal Plain landscape character area, the level of effect on landscape character will fall within that previously assessed in the **PEIR**, for that part of the Lyminster-Angmering Coastal Plain landscape character area which extends north and overlaps with the SC12: Angmering Upper Coastal Plain landscape character type. The level of landscape effect on the Black Ditch Rife landscape character area will however increase from those assessed in the **PEIR** (from Negligible to Moderate adverse and **Significant**, although temporary) which will be commensurate with the level of effect on the adjacent Lyminster-Angmering Coastal Plain previously assessed and reported in the **PEIR**.

- 3.4.3.3 As a result of ACR-02, increased visual effects will be experienced by receptors previously assessed in the PEIR including receptors at Wick and the caravan park, PRoW 2165 to the north and northeast of the caravan park road users along the A284 and residents to the south and east of the settlement of Lyminster. Additionally new receptors could include residential properties along the A284, at Brookfield and Calcetto Farm two PRoW (2163/1 and bridleway 2163) to the east of the A284, recreational users of the paddocks south of Lyminster, and users of the access track to the southeast of Calcetto Farm. The views from some residential receptors (including the caravan park) may be significantly affected. These will be assessed as part of a Residential Visual Amenity Assessment in the ES. Visual effects on the views from the A284 are likely to fall within the range previously assessed in **PEIR**, although affecting different sections of the route. A new PRoW receptor (Bridleway 2163, not previously assessed in the PEIR) and additional parts of PRoW 2165 and 2163/1 will be significantly affected, although falling within the range previously assessed in the **PEIR**.
- 3.4.3.4 The addition of ACR-02 will affect new landscape and visual receptors and is likely to entail significant effects for a temporary period. Implementation of embedded environmental measures will be required²². This does change the overall assessment conclusions (see the **Tables G-2 – G-7 in Appendix G**) presented in **Sections 19.9 to 19.14 within Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.4.4 Air quality

- 3.4.4.1 Additional air quality residential receptors have been identified within 350m of ACR-02. The introduction of new sensitive receptors will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see

²² See **Appendix F: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C-29, C-32, C-33, C-81, C-82, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-169, C-174, C-183, C-193, C-196, C-199 and C-202.**

Table G-8 in Appendix G, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26 from Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**. The construction dust assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

- 3.4.4.2 ACR-02 includes three trenchless crossings (TC-03, TC-04 and TC-05) which will be positioned away from sensitive receptors. Whilst the introduction of trenchless crossings and associated compounds may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4** of the **PEIR**, this does not change the overall assessment and conclusions provided in **Sections 20.9 to 20.15** within **Chapter 20 of the PEIR**. The construction plant modelling will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.4.4.3 ACR-02 includes a temporary construction access (AA-05) which introduces new air quality receptors in close proximity. AA-06 does not introduce any new receptors. Neither the AA-05 or AA-06 change the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26 from Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.4.4.4 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.4.5 Soils and agriculture

- 3.4.5.1 ACR-02 does not introduce any additional soils and agriculture receptors. The 1:250,000 MAFF provisional Agricultural Land Classification Map of England and Wales mapping shows that the ALC grades within ACR-02 are Grades 2 and 3. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-02 introduces an additional area of approximately 27.5ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR** conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).
- 3.4.5.2 The soils and agriculture assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha. The additional land in ACR-02 will increase this total by 27.5ha, this equates to a 13.3% increase in the area of ground potentially subject to temporary disturbance during construction. ACR-02 increases the potential area of Grade 2 land that may be disturbed by Rampion 2. Grade 2 land is a more sensitive receptor than Grade 3a, however the assessment based on all soil being Grade 3a is still considered to be sufficiently conservative. Grade 3a was selected as a conservative average grade for the land within the original PEIR Assessment Boundary based upon review of the information sources set out in **Table 21-7** within **Chapter 21 of the PEIR** where land has been mapped as

provisional Grade 3. This can include Subgrade 3b land which is not BMV and is a less sensitive receptor, and land within the original PEIR Assessment Boundary also includes land mapped provisionally as Grade 4. This range of provisional grades between 2 and 4 is common to the additional land and there is no change to the environmental receptors or the embedded environmental measures, ACR-02 does not change the assessment outcomes and conclusions (see **Table G-9 in Appendix G**) presented in **Sections 21.9 to 21.13** within **Chapter 21 of the PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary and presented in the ES. The updated assessment in the ES will be informed by a soil survey which will confirm the ALC grade of the land.

3.4.6 Noise and vibration (onshore)

- 3.4.6.1 ACR-02 introduces additional residential receptors in Lyminster, both in terms of different assessments (e.g., the mobile home park within 10m of the original PEIR Assessment Boundary will be assessed for noise from the cable trenching, trenchless crossing in addition to the access route) and completely new receptors (e.g. residents east of the A284: Lyminster Road). Onshore cable construction activities associated with ACR-02 will be temporary and embedded environmental measures (for example acoustic screening and operational noise management measures) will be implemented to minimise noise disturbance. Therefore, ACR-02 does not change the overall assessment outcomes or conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22 of the PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.4.6.2 ACR-02 includes three trenchless crossings (TC-03, TC-04 and TC-05) crossing the A284, future Lyminster Bypass and A27, which introduce new noise sensitive receptors within approximately 60m from TC-03 and 180m from TC-04. Although ACR-02 introduces new trenchless crossings and associated new noise sensitive receptors, considering the implementation of embedded environmental measures²³, there is no change to the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22 of the PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary in the ES.
- 3.4.6.3 ACR-02 includes a temporary construction access (AA-05) which introduces new noise sensitive receptors within 20m of the route on the A284. AA-06 does not introduce any new receptors. Neither the AA-05 or AA-06 change the overall assessment outcomes and conclusions in the assessment of temporary and permanent accesses in **Section 22.9** within **Chapter 22 of the PEIR**. The assessment of temporary and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.4.6.4 Therefore, considering the implementation of embedded environmental measures¹⁵, ACR-02 does not change the overall assessment outcomes and conclusions (see **Table G-10 in Appendix G**) provided in **Sections 22.9 to 22.15** within **Chapter 22 of the PEIR**. The construction noise predictions and modelling

²³ Specifically, see **Appendix F: C-26** on construction plant mitigation such as mufflers and **C-33** on the adoption of a COCP.

will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

3.4.7 Terrestrial ecology and nature conservation

3.4.7.1 The additional areas associated with ACR-02, AA-05 and AA-06 cross arable fields, hedgerows, ditches and existing farm tracks. The hedgerows are likely dominated by native species and therefore qualify as HPI; this assumption of HPI is highly likely given the make-up of hedgerows in the general area and the broad qualification criteria for hedgerow HPI. However, there are no other HPI present within ACR-02 and the majority of the area is dominated by habitat of low biodiversity value (i.e., intensively managed arable fields) with limited potential for concentrations of legally protected or otherwise notable species. Therefore, considering the implementation of embedded environmental measures²⁴ (including the reduction in temporary hedgerow loss to a maximum of 14m per crossing, from 30 - 50m listed in the PEIR – see **Appendix I**), ACR-02 does not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) for the habitats present outlined in **Sections 23.10** to **23.14** within **Chapter 23: Terrestrial ecology, Volume 2** of the PEIR.

3.4.8 Transport

3.4.8.1 ACR-02 includes three additional public rights of way (PRoW) (2163_1, 2163 and 2201_1) receptors and these will be incorporated into the **outline Public Rights of Way Management Plan (PRoWMP)** provided alongside the DCO Application.

3.4.8.2 ACR-02 includes a temporary construction access (AA-05) from the A284 Lyminster Road and a permanent access (AA-05) from Calceto Lane. Both accesses (AA-05 and AA-06) will be reflected in the **outline CTMP** provided alongside the DCO Application.

3.4.8.3 ACR-02 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24 of the PEIR**.

3.4.8.4 Considering the implementation of embedded environmental measures¹⁷, ACR-02 does not change the overall assessment outcomes and conclusions (see **Table G-12** in **Appendix G**) presented in **Sections 24.10** to **24.16** within **Chapter 24: Transport, Volume 2** of the PEIR.

3.4.8.5 The assessment of transport effects will be updated in line with the ES Assessment Boundary in the **outline PRoWMP**, **outline CTMP**, and the ES submitted alongside the DCO Application.

3.4.9 Ground conditions

3.4.9.1 ACR-02 largely passes through undeveloped agricultural fields and does not interact with any minerals safeguarding areas. A historic landfill site (Fargro, Toddington Lane) which is indicated to have accepted commercial and household waste between 1979 and 1980 is present approximately 300m from ACR-02.

²⁴ See **Appendix F** for relevant commitments namely C-199 as described in PEIR and C-115 updated since PEIR.

However, considering the distance from ACR-02 to the location of the landfill and the implementation of embedded environmental measures¹⁸, there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13 in Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2 of the PEIR**.

3.4.10 Historic environment

- 3.4.10.1 ACR-02 includes a temporary construction access (AA-05) from the A284 Lyminster Road. AA-06 will also be required in association with ACR-02.
- 3.4.10.2 ACR-02 (with AA-05) lies within 20m of the Lyminster Conservation Area and also within close proximity to the grade II listed buildings within the Conservation Area, the nearest being Church Farmhouse (1276284) within 70m of ACR-02. These designated heritage assets are of high heritage significance primarily for their architectural interests in line with criteria set out in **Table 26-20** within **Chapter 26: Historic environment, Volume 2 of the PEIR**. Keys views from the Conservation Area are to the north toward Arundel Castle and Park, whilst existing mature planting along the southern boundary of the Conservation Area and around the Church Farmhouse, heavily restricts views to the south and southwest. The fields south of the Conservation Area provide some link to the agricultural history of the rural settlement of Lyminster but this makes a limited contribution to the historic interest of these heritage assets.
- 3.4.10.3 ACR-02 (with AA-05) may increase the perceptibility of construction activities from these designated heritage assets but this is expected to be experienced as audible changes, rather than visual due to the very limited visual connection between these assets and the land through which ACR-02 crosses. Construction activities within ACR-02 (and AA-04) will alter the rural character of this landscape having a limited impact on heritage interests. However, these changes will be time-limited and any adverse effects will be temporary.
- 3.4.10.4 At PEIR stage, a low to very low magnitude of change resulting in a minor to moderate adverse effect for Lyminster Conservation Area and grade II listed buildings within (see **Table 26-26** within **Chapter 26 of the PEIR**). ACR-02 is considered likely to introduce a low magnitude of change to the setting of the Lyminster Conservation Area and Church Farmhouse (1276284) resulting in a moderate adverse effect, which according to the classification of effects set out in the PEIR, could potentially be significant. However, taking into consideration the discussion above, the assessment of residual effects on these designated heritage assets will be **Not Significant**.
- 3.4.10.5 ACR-02, AA-05 and AA-06 do not change the assessment outcome or conclusions for any other designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) presented in **Sections 26.9 to 26.15** within **Chapter 26 of the PEIR**. Whilst other designated heritage assets are identified within 1km of ACR-02 in addition to those presented at PEIR stage, due to the nature of the assets, topography, intervening planting and built infrastructure, and the relative distance from ACR-02, development within ACR-02 is unlikely to impact the setting of other heritage assets and therefore no effects are anticipated. The assessment of designated heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

3.4.10.6 ACR-02 crosses an area where previous archaeological investigations associated with the Lyminster Bypass identified undated ditches, indicating a potential for similar features to be present. Such isolated features are likely to be remains of past agricultural activity or historic changes in land management and are considered to be of low heritage significance. The general occurrence and potential for this type of receptor at different locations across the onshore cable corridor has already been identified at PEIR stage. ACR-02, AA-05 and AA-06 do not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions¹⁹ (regarding these receptor types than was presented in **Section 26.9** within **Chapter 26** of the PEIR. ACR-02, AA-05 and AA-06 do not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26** of the PEIR.

3.4.11 Water environment

3.4.11.1 The area within ACR-02 encompasses two Ordinary Watercourse crossings, namely a tributary of the Black Ditch (West Sussex) watercourse and another ditch between Lyminster and Crossbush. **Paragraph 27.6.15** and **Table 27.6** of **Chapter 27: Water environment, Volume 2** of the PEIR also identifies other water environment receptors including the Black Ditch (West Sussex) (GB107041012890) WFD water body and an unlicensed PWS abstraction, Pauls House. Therefore, ACR-02 does not introduce new water environment receptors beyond those identified in the **Chapter 27** of the PEIR.

3.4.11.2 Considering the implementation of embedded environmental measures²⁵, ACR-02 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-15** to **G-21** in **Appendix G**) presented in **Sections 27.9** to **27.11** within **Chapter 27** of the PEIR.

3.4.12 Major accidents and disasters

3.4.12.1 ACR-02 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6** to **28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the PEIR.

3.4.13 Greenhouse gas assessment

3.4.13.1 ACR-02 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the PEIR.

²⁵ See **Appendix F: C-3, C-7, C-8, C-10, C-11, C-13, C-19, C-20, C-21, C-25, C-27, C-28, C-29, C-30, C-33, C-64, C-73, C-74, C-75, C-76, C-77, C-78, C-117, C-120, C-121, C-122, C-123, C-124, C-125, C-126, C-127, C-128, C-129, C-130, C-131, C-133, C-134, C-135, C-137, C-138, C-139, C-140, C-141, C-142, C-143, C-144, C-145, C-146, C-147, C-148, C-149, C-150, C-151, C-152, C-167, C-179, C-181, C-182** .

3.5.2 Socio-economics

3.5.2.1 ACR-03 introduces an additional receptor (footpath 2189), the additional area has the potential to impact on access to and enjoyment of onshore recreation activity for this receptor. However, considering the implementation of embedded environmental measures¹², ACR-03 does not change the assessment outcomes or conclusions of the assessments of economy, tourism economy and land and water-based recreation (see **Table G-1** in **Appendix G**), presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR**. The socio-economic assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

3.5.2.2 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR (ranging from Not Significant to Significant)**.

3.5.3 Landscape and visual impact

3.5.3.1 ACR-03 provides an alternative route between Crossbush Lane and Clay Lane, further to the northeast within the South Downs National Park (SDNP). Much of ACR-03 will entail trenchless crossings (TC-06 and TC-07) which will preserve all woodland at Poling Copse and all mature trees/hedgerows along both sides of Clay Lane. The only additional landscape elements not previously assessed in the PEIR will be two mature hedgerows with trees that will be affected by the temporary construction works and subject to embedded environmental measures²⁶.

3.5.3.2 Visual receptors will include road users on Crossbush Lane and Clay Lane, people on the PRow 2189 and residential properties along Crossbush Lane and Clay

²⁶ See **Appendix F: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-23, C-27, C-29, C-32, C-33, C-66, C-81, C-82, C-103, C-104, C-107, C-111, C-113, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-174, C-183, C-193, C-196, C-199, C-200 C-202 C-204, C-308 and C-317.**

Lane. Although all of these receptors are likely to be well screened by existing vegetation which will be unaffected.

- 3.5.3.3 Considering the implementation of embedded environmental measures, ACR-03 does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-7 in Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR** which included significant effects. Although it will affect different geographical areas of landscape and visual receptors. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.5.4 Air quality

- 3.5.4.1 ACR-03 does not introduce any additional residential receptors. Therefore, ACR-03 will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**.
- 3.5.4.2 ACR-03 includes additional trenchless crossings (TC-06 and TC-07) which will be positioned away from sensitive receptors. Whilst the introduction of a trenchless crossing and associated compound may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4**, this does not change the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20 of the PEIR**.
- 3.5.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.5.5 Soils and agriculture

- 3.5.5.1 ACR-03 does not introduce any new soils and agriculture receptors. The 1:250,000 MAFF provisional Agricultural Land Classification Map of England and Wales mapping shows that the ALC grades within ACR-03 are Grade 3 and 'non-agricultural'. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-03 introduces an additional area of approximately 5.47ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR** conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).
- 3.5.5.2 The soils and agriculture assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha, the additional land in ACR-03 will increase this total by 5.47ha, this equates to a 2.64% increase in the area of ground potentially subject to temporary disturbance during construction. When included within the total area as assessed at PEIR, this results in a small percentage increase. No

change is anticipated to the environmental receptors, the embedded environmental measures¹⁴), the assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) presented in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**. The soils and agriculture assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

3.5.6 Noise and vibration (onshore)

- 3.5.6.1 ACR-03 does not introduce additional noise sensitive receptors however ACR-03 will include onshore cable trenching activities potentially being closer to residential receptors already considered within **Section 22.9** within **Chapter 22** of the **PEIR**. The onshore cable construction activities associated with ACR-03 will be temporary and embedded environmental measures²³ will be implemented to minimise noise disturbance. Therefore, considering the implementation of embedded environmental measures, ACR-03 does not change the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22** of the **PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.5.6.2 ACR-03 includes two trenchless crossings (TC-06 and TC-07). Although ACR-03 introduces new trenchless crossings, considering the implementation of embedded environmental measures²³, there is no change to the overall assessment outcomes and conclusions of the trenchless crossings assessment provided in **Section 22.9** within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.5.6.3 Therefore, considering the implementation of embedded environmental measures (C-22, C-26, C-33 and C-160, see **Appendix F**), ACR-03 does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

3.5.7 Terrestrial ecology and nature conservation

- 3.5.7.1 ACR-03 includes an area of Ancient Woodland (replanted) and a Local Wildlife Site (LWS) known as Poling Copse. In addition, hedgerows present within ACR-03 are linked directly with ponds outside the PEIR Assessment Boundary that are known to support great crested newts. Habitats within ACR-03 and the surrounding areas are known to be well used by bats (including barbastelle). However, a trenchless crossing (with a minimum depth of 6m) will be implemented to avoid effects on Ancient Woodland/LWS (as they have been used on other cable installation projects – including for offshore wind connections) and a stand of mature trees bordering Clay Lane. Those parts of ACR-03 not subject to trenchless crossings are dominated by pasture fields and a hedgerow (which qualifies as HPI). Although the hedgerow and pasture present will be used by bats

and great crested newts, the embedded environmental measures²⁷ (including the reduction in temporary hedgerow loss to a maximum of 14m per crossing, from 30 - 50m listed in the PEIR, also see **Appendix I**) will operate to mitigate the risk as described in the PEIR **Sections 23.10 to 23.14** within **Chapter 23: Terrestrial ecology, Volume 2 of the PEIR**. With the environmental embedded measures specified, the addition of ACR-03 does not change the assessment outcomes and conclusions (see **Table G-11 in Appendix G**) presented in **Sections 23.10 to 23.14** within **Chapter 23 of the PEIR**.

3.5.8 Transport

- 3.5.8.1 ACR-03 includes one additional public rights of way (PRoW) (2189) receptor that will be incorporated into the **outline PRoWMP** provided alongside the DCO Application.
- 3.5.8.2 ACR-03 will result in one new access off Crossbush Lane at an appropriate location and this will be reflected in the **outline CTMP** to be provided alongside the DCO Application.
- 3.5.8.3 ACR-03 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24 of the PEIR**.
- 3.5.8.4 Considering the implementation of embedded environmental measures¹⁷, ACR-03 does not change environmental receptors or the overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24: Transport, Volume 2 of the PEIR**.
- 3.5.8.5 The assessment of transport effects will be updated in line with the ES Assessment Boundary in **outline CTMP**, and the ES submitted alongside the DCO Application.

3.5.9 Ground conditions

- 3.5.9.1 ACR-03 largely includes undeveloped agricultural fields and woodland and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. Therefore, considering the implementation of embedded environmental measures¹⁸, there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13 in Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2 of the PEIR**.

3.5.10 Historic environment

- 3.5.10.1 ACR-03 does not change the assessment outcome or conclusions for those designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) identified at PEIR, presented in **Sections 26.9 to 26.15** within **Chapter 26: Historic environment, Volume 2 of the PEIR**. Whilst other designated heritage assets are identified within 1km of ACR-03, in addition to those at PEIR, due to the nature of the assets, topography, intervening planting

²⁷ See **Appendix F** for relevant commitments, namely C-6, C-199 as described in PEIR and C-115 updated since PEIR.

and built infrastructure, and the relative distance from ACR-03, development within ACR-03 is unlikely to impact the setting of other heritage assets and therefore no additional effects are anticipated.

- 3.5.10.2 ACR-03 encounters an additional Archaeological Notification Area (ANA) (SDNPA 027), which relates to a potential for remains of prehistoric occupation, Bronze Age barrows, and Roman occupation debris, though none of the Historic Environment Record (HER) records relating to known finds or features are located within ACR-03 itself. The part of the ANA which ACR-03 encounters correlates with that of Ancient Woodland which will be crossed by trenchless crossing (TC-06). The exact depth of the trenchless crossing is uncertain at this stage; however it will be a minimum of 6m. Use of trenchless crossing is expected to minimise the impacts on potential archaeological remains within ACR-03 where it crosses the ANA, compared with an open cut method, due to potential archaeological remains not anticipated at 6m or deeper below ground level. ACR-03 does not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions²⁸ regarding these receptor types to what was presented at PEIR stage in **Section 26.9** within **Chapter 26** of the **PEIR**.
- 3.5.10.3 ACR-03 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16**. The assessment of effects on heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

3.5.11 **Water environment**

- 3.5.11.1 The area within ACR-03 lies adjacent to undesignated ponds which **Table 27.6** of **Chapter 27: Water environment, Volume 2** of the **PEIR** also identifies as water environment receptors. Therefore, ACR-03 does not introduce new water environment receptors beyond those identified in the **Chapter 27** of the **PEIR**.
- 3.5.11.2 Considering the implementation of environmental measures²⁵, ACR-03 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-15** to **G-21** in **Appendix G**) presented in **Sections 27.9** to **27.11** within **Chapter 27** of the **PEIR**.

3.5.12 **Major accidents and disasters**

- 3.5.12.1 ACR-03 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6** to **28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

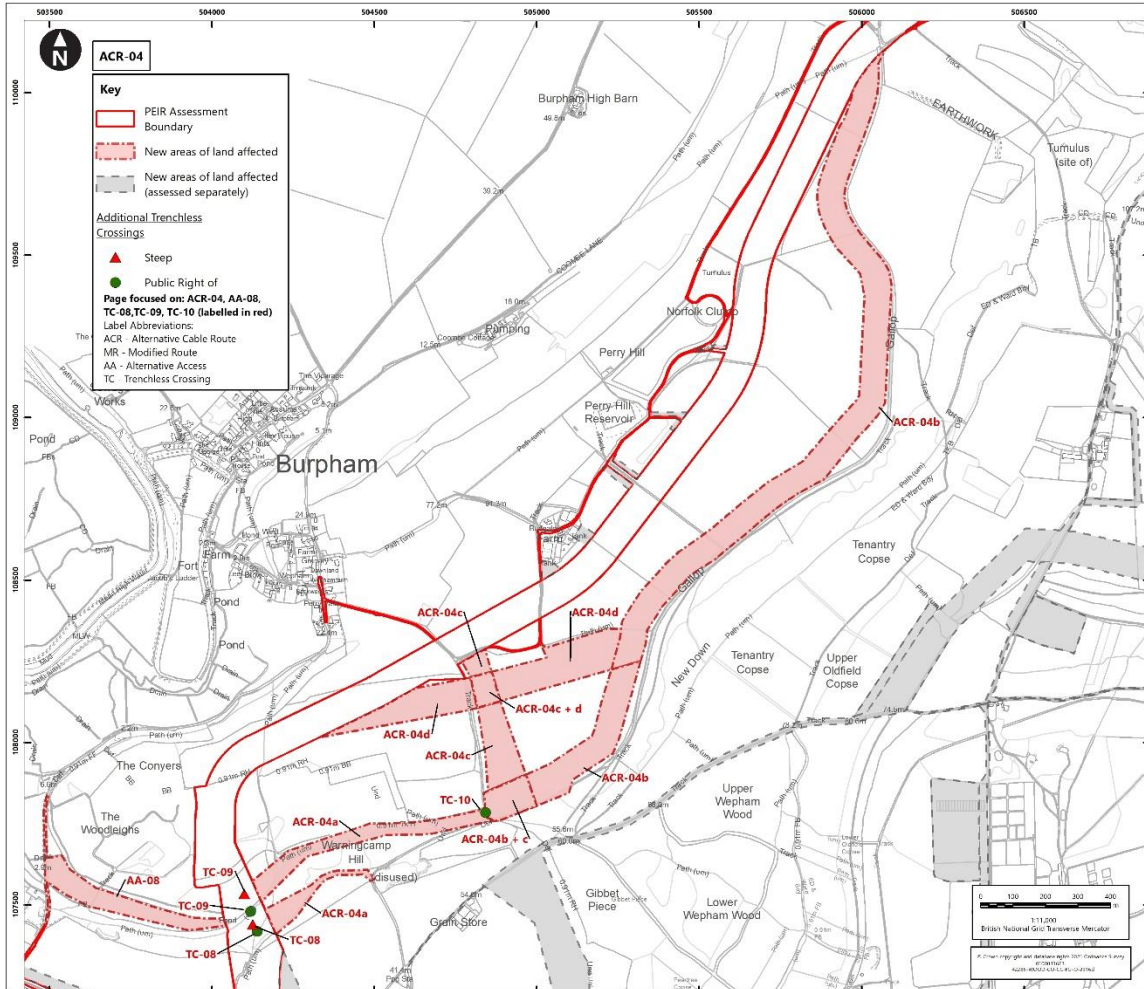
²⁸ See **Table G-14** in **Appendix G**, noting **Appendix F** for relevant commitments updated since PEIR: C-1, C-4, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-36, C-37, C-61, C-68, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

3.5.13 **Greenhouse gas assessment**

- 3.5.13.1 ACR-03 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the **PEIR**.

3.6 Alternative Cable Route -04 (ACR-04)

Graphic 3-4 ACR-04 (see Figure 13, Appendix A)



3.6.1.1 **Figures 14, 61 and 108 in Appendix B** outline the key environmental features relevant to ACR-04 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.6**. For the environmental review of the associated AA-08 with the ACR-04, please see **Section 6**.

ACR-04 Environmental Review Overview

Additional sensitive receptors introduced as a result of ACR-04 include socio-economics, historic environment receptors and noise and vibration. Some changes in the magnitude of impact to sensitive receptors will be experienced by terrestrial ecology and nature conservation, and water environment receptors. When considering the implementation of embedded environmental measures, new or different significant residual effects which alter the assessment outcomes and conclusions presented in the PEIR have been identified for water environment as temporary effects.

3.6.2 Socio-economics

ACR-04a&b

- 3.6.2.1 ACR-04a&b introduces additional receptors including bridleways 2213 (part of Monarch's Way) and 2214, and also on footpath 2220-1. The alternative area could affect access to and enjoyment of onshore recreation activity for these receptors, including a short length of Monarch's Way. An alternative bridleways route via 2215 and 2191_2 is available in place of bridleway 2214. The minor road, Bathurst Lane, offers an alternative to bridleway 2213. Together with the implementation of embedded environmental measures²¹, including C-202 Outline PRoWMP, this will not lead to additional significant residual effects (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR**.

ACR-04a&c

- 3.6.2.2 ACR-04a&c includes additional receptors including bridleway 2213 (part of Monarch's Way) and also on footpaths 2220-1 and 2226 (part of an informal circular walk from Wepham) which could affect access to and enjoyment of onshore recreation activity for these receptors, including a short length of Monarch's Way. An alternative to footpath 2226 will be available via footpath 2256. The minor road, Bathurst Lane offers an alternative to bridleway 2213. Together with the implementation of embedded environmental measures²¹, including C-202 Outline PRoWMP, ACR-04a&c does not lead to additional significant residual effects (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18 of the PEIR**.

ACR-04d&b

- 3.6.2.3 ACR-04d&b will have potential to further impact on footpath 2226 and also on footpath 2221 and bridleway 2214 which could affect access to and enjoyment of onshore recreation activity for these receptors. However, as alternative routes are available using bridleway 2221 and bridleway 2215 and the implementation of embedded environmental measures, ACR-04d&b does not lead to any additional significant residual effects (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18 of the PEIR**.
- 3.6.2.4 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):
- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
 - the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and

- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

3.6.3 Landscape and visual impact

ACR-04a&b

- 3.6.3.1 ACR-04a (approximately 740m) is routed northeast through Warningcamp Hill and the New Down LWS from the edge of the original PEIR Assessment Boundary. It includes three trenchless crossings (TC-08, TC-09 and TC-10) that will ensure the route avoided woodland at The Knell and the associated PRoW. The rest of ACR-04a will cross an area of Arun Valley Sides landscape character which includes open and steeply sloping grassland. The route passes between small groups of trees/scrub which are just beyond the boundary. These will be subject to embedded environmental measures to protect tree roots and canopies and reinstate to pre-existing conditions as far as reasonably practicable. Visual receptors include people along the Monarch's Way and associated PRoW (as described in **Section 19.10** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**) and at the Warningcamp Hill and New Down LWS. Considering the implementation of embedded environmental measures²⁹, ACR-04a will not change the overall assessment outcomes and conclusions on the landscape and visual receptors presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. Although some significant effects are likely these will fall within the range previously assessed in the PEIR, although affecting different geographical areas of the landscape and visual receptors. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.
- 3.6.3.2 ACR-04b continues northeast from ACR-04a, beyond The Knell, extending 2.8km, following the edges of fields and routed parallel to Warningcamp Hill and New Down LWS and PRoW 2214. The route crosses an area of the Arun Open Downs landscape character and approximately eight hedgerows that divide large arable fields and PRoW 2226. Visual receptors include people on the PRoWs and at Warningcamp Hill and New Down LWS. Considering the implementation of embedded environmental measures³⁰, ACR-04b will not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-7** in **Appendix G**) on the landscape and visual receptors presented in **Sections 19.9 to 19.14** within **Chapter 19 of the PEIR**. Although some significant effects are likely (in particular part of the Arun Open Downs landscape character and PRoWs including PRoW

²⁹ See **Appendix F** C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C 29, C-32, C-33, C-66, C-67, C-81, C-82, C-103, C-104, C-107, C-111, C 113, C-115, C-128, C-130, C-132, C-133, C-157, C-161, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-200 and C-202.

³⁰ See **Appendix F**: C-1, C-3, C-4, C-7, C-18, C-19, C-20, C-22, C-26, C-32, C-33, C-34, C-35, C-43, C-46, C-53, C-56, C-66, C-128, C-161, C-162, C-164 and C-168.

2214) these will fall within the range previously assessed in the PEIR, although affecting different geographical areas of the landscape and visual receptors. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

ACR-04a&c

- 3.6.3.3 Whilst ACR-04a will remain as previously described (see **Paragraph 3.6.3.1**) ACR-04c is routed between The Knell and the original PEIR Assessment Boundary to the north. The route crosses an area of the Arun Open Downs landscape character previously assessed at **PEIR**. Visual receptors include people on the PRoWs (including PRoWs 2226, 2221, 2212 and 2213) and at Warningcamp Hill to New Down LWS. Some significant effects are likely (in particular part of the Arun Open Downs landscape character and PRoWs including PRoW 2214). These will fall within the range previously assessed in the **PEIR**, although affecting different geographical areas of the landscape and visual receptors. Considering the implementation of embedded environmental measures³¹, ACR-04a&c will not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-7** in **Appendix G**) on the landscape and visual receptors presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

ACR-04b&d

- 3.6.3.4 Whilst ACR-04b will remain as previously described (under ACR-04a&b), ACR-04d is routed approximately 480m east, between the original PEIR Assessment Boundary and the edge of Warningcamp Hill and New Down LWS. The route also crosses an area of the Arun Open Downs landscape character and approximately three hedgerows/field boundaries that divide large arable fields and one PRoW 2221. Visual receptors include people on the PRoWs and at Warningcamp Hill and New Down LWS. Considering the implementation of embedded environmental measures³¹, ACR-04d will not change the overall assessment outcomes and conclusions on the landscape and visual receptors presented in **Sections 19.9 to 19.14** within **Chapter 19 of the PEIR**. Although some significant effects are likely (in particular part of the Arun Open Downs landscape character and PRoWs) these will fall within the range previously assessed in the PEIR, although affecting different geographical areas of the landscape and visual receptors. Considering the implementation of embedded environmental measures³², ACR-04b&d will not change the overall assessment

³¹ See **Appendix F**: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C-29, C-32, C-33, C-66, C-67, C-81, C-82, C-103, C-104, C-107, C-111, C-113, C-115, C-128, C-130, C-132, C-133, C-157, C-161, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-200 and C-202.

³² See **Appendix F**: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C-29, C-32, C-33, C-66, C-67, C-81, C-82, C-103, C-104, C-107, C-111, C-113, C-115, C-128, C-130, C-132, C-133, C-157, C-161, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-200, C-202, C-204, C-211, C-226, C-239, C-240, C-308, C-317, C-318, and C-327.

outcomes and conclusions (see **Tables G-2 – G-7** in **Appendix G**) on the landscape and visual receptors presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2** of the PEIR. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.6.4 Air quality

- 3.6.4.1 ACR-04a&b, ACR-04a&c and ACR-04b&d do not introduce any additional residential receptors. ACR-04 will therefore not change the outcome of the construction dust assessment and overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2** of the PEIR.
- 3.6.4.2 ACR-04 includes three additional trenchless crossings (TC-08, TC-09 and TC-10). The air quality assessment in the PEIR considered emissions associated with trenchless crossings by undertaking air dispersion modelling to predict impacts on sensitive receptors. Whilst the introduction of trenchless compounds and associated compound may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4**, of the PEIR. This does not change the overall assessment and conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20** of the PEIR) provided in **Sections 20.9 to 20.15** within **Chapter 20** of the PEIR.
- 3.6.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.6.5 Soils and agriculture

- 3.6.5.1 ACR-04, taken together, does not introduce any new soils and agriculture receptors. The 1:250,000 Ministry of Agriculture Fisheries and Food (MAFF) provisional Agricultural Land Classification Map of England and Wales mapping shows that the ALC grades within ACR-04 are Grades 3 and 4. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-04 introduces an additional area of approximately 40.33ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2** of the PEIR conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).
- 3.6.5.2 The Grade 3 ALC classification indicates good to moderate agricultural land, meaning land with moderate limitations affecting choice of crops, timing, type of cultivation, harvesting and level of yield. Grade 3 land is divided into two subgrades designated as 3a and 3b. Grade 3a (good quality agricultural land) is defined as best and most versatile (BMV) land, while Grade 3b (moderate quality agricultural land) is not BMV. Grade 4 indicates poor quality agricultural land, meaning land with severe limitations on the range of viable crops and level of yields, which is mainly suited to grass with occasional arable crops such as

cereals and forage crops. Grade 4 can also include arable land that is very dry because of drought.

- 3.6.5.3 The soils and agriculture assessment in the **PEIR** is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha. The additional land in ACR-04 will increase this total by 40.33ha, this equates to a 19.5% increase in the area of ground potentially subject to temporary disturbance during construction. The additional land covered by ACR-04 does not change the environmental receptors, the embedded environmental measures¹⁴ or the assessment outcomes and conclusions (see the **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

3.6.6 Noise and vibration (onshore)

- 3.6.6.1 ACR-04 introduces a single new noise sensitive receptor at the stables accessed from Blakehurst Lane that requires further consideration in the noise and vibration assessment. The onshore cable construction activities associated with ACR-04 will be temporary and embedded environmental measures²³ will be implemented to minimise noise disturbance. Therefore, considering the implementation of embedded environmental measures, ACR-04 does not change the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**. The onshore cable installation (trenched) assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.6.6.2 ACR-04 includes trenchless crossings (TC-08, TC-09 and TC-10) with the closest residential receptor being at a distance of approximately 700m and the stables at a distance of approximately 300m. Although ACR-04 introduces new trenchless crossings, considering the implementation of embedded environmental measures²³, there is no change to the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22** of the **PEIR**. The trenchless crossings assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 3.6.6.3 Therefore, considering the implementation of embedded environmental measures (C-22, C-26, C-33 and C-160, see **Appendix F**), ACR-04 does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

3.6.7 Terrestrial ecology and nature conservation

- 3.6.7.1 Part of the area covered by ACR-04 (and the route described within the PEIR) crosses the Peppering Project (north of the Warningcamp and New Down LWS). The Peppering Project is a higher tier countryside stewardship scheme that

manages farmland sensitively for nature conservation across a large area. Following the publication of the PEIR, additional embedded environmental measures have been devised for this area should it be included within the final design. These are described in **Appendix I**.

ACR-04a&b

- 3.6.7.2 ACR-04a includes a diversion from the Public Right of Way (Monarch's Way) along an existing footpath within the Warningcamp Hill and New Down LWS. ACR-04a includes potential cable installation within the valley bottom. This results in a greater level of disruption to the LWS than reported within the **PEIR** (based on length of cable, further exacerbated by a newly proposed trenchless crossing of the LWS on the original alignment TC-08 and TC-09 – see **Section 5**). However, this is confined mainly to modified grassland, as opposed to the calcareous grassland, scrub and woodland common on the valley slopes. ACR-04a runs adjacent to an area of Ancient Woodland (The Knell) which requires a trenchless crossing (TC-10) to ensure that the root protection zone associated with the trees present can be maintained. As a significant effect on the LWS was concluded at **PEIR**, the level of assessment will not change. As ACR-04a transitions to ACR-04b, the route runs across a number of arable fields with boundary features consisting of grass margins, conservation headlands and hedgerows (qualifying as HPI). These fields are the same as those crossed in the original PEIR Assessment Boundary. Therefore, this will not constitute a change in the outcome of the assessment (see **Table G-11** in **Appendix G**) in **Sections 23.10** to **23.14** within **Chapter 23** of the **PEIR**. The level of effect on hedgerows will also remain similar between options. Although it is noted that embedded environmental measures described in **Appendix I** sees the level of temporary habitat loss at hedgerows substantially reduced from the position published at **PEIR**. See **Appendix F** for relevant commitments namely C-6 and C-199 as described in **PEIR** and C-115 updated since **PEIR**.

ACR-04a&c

- 3.6.7.3 ACR-04a represents a diversion from the Public Right of Way (Monarch's Way) along an existing footpath within the Warningcamp Hill and New Down LWS. ACR-04a includes potential cable installation within the valley bottom. This results in a greater level of disruption to the LWS than reported within the **PEIR** (based on length of cable, further exacerbated by a newly proposed trenchless crossing of the LWS on the original alignment TC-08 – see **Section 5**). However, this is confined mainly to modified grassland, as opposed to the calcareous grassland, scrub and woodland common on the valley slopes. ACR-04a runs adjacent to an area of Ancient Woodland (The Knell) which requires a trenchless crossing (TC-10) to ensure that the root protection zone associated with the trees present can be maintained. As a significant effect on the LWS was concluded at **PEIR**, the level of assessment will not change as ACR-04a transitions to ACR-04c, the route runs across a number of arable fields with boundary features consisting of grass margins, conservation headlands and hedgerows (qualifying as HPI). These fields are the same as those crossed in the original PEIR Assessment Boundary. Therefore, this will not constitute a change in the outcome of the assessment within the **PEIR**. However, there is an additional double tree line (marking the

extent of a farm track) that will be crossed. Given the **PEIR** assessment considers these type of features across the approximately 39.5km route, the addition or removal of one or more boundary features does not constitute a change in the outcome of the assessment (see **Table G-11 in Appendix G**) within **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**. See **Appendix F** for relevant commitments namely C-6 and C-199 as described in PEIR and C-115 updated since PEIR. Also see **Appendix I** for embedded environmental measures specific to the Peppering Project area.

ACR-04d&b

3.6.7.4 ACR-04d&b run across a number of arable fields with boundary features consisting of grass margins, conservation headlands and hedgerows. These fields are the same as those crossed in the original PEIR Assessment Boundary. Therefore, this will not constitute a change in the outcome of the assessment (see **Table G-11 in Appendix G**) within **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**. See **Appendix F** for relevant commitments namely C-6 and C199 as described in **PEIR** and C-115 updated since PEIR. Also see **Appendix I** for embedded environmental measures specific to the Peppering Project area.

3.6.8 Transport

3.6.8.1 ACR-04a to ACR-04d in isolation do not change the environmental receptors or the overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24: Transport, Volume 2** of the **PEIR**.

3.6.8.2 ACR-04a, ACR-04b, ACR-04c and ACR-04d all however generate additional PRow effects to those assessed at PEIR and these will be set out in the **outline PRowMWP** provided to support the DCO Application. ACR-04a effects PRow 2212, ACR-04b effects PRow 2213, 2214 and 2215, ACR-04c effects PRow 2226 and ACR-04d PRow 2221.

3.6.8.3 ACR-04 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the **PEIR**.

3.6.8.4 The assessment of transport effects will be updated in line with the ES Assessment Boundary in **outline CTMP**, **outline PRowMWP** and the ES submitted alongside the DCO Application.

3.6.9 Ground conditions

ACR-04a&b

3.6.9.1 ACR-04a&b largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. At the southwestern end of ACR-04a, the Warningcamp Quarry Locally Important Geological Site (LIGS) will be approximately 80m from the original PEIR Assessment Boundary with a new temporary access also created off the existing road immediately adjacent to the quarry. However, it is noted that no construction work will take place within the quarry itself and therefore

from a ground conditions perspective, there will be no impact on the LIGS. Therefore, there is no change to the assessment outcomes and conclusions provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2 of the PEIR**.

ACR-04a&c

3.6.9.2 ACR-04a&c largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. At the southwestern end of ACR-04a, the Warningcamp Quarry LIGS will be approximately 80m from the original PEIR Assessment Boundary with a new temporary access also created off the existing road immediately adjacent to the quarry. However, it is noted that no construction work will take place within the quarry itself and therefore from a ground conditions perspective, there will be no impact on the LIGS. Therefore, there is no change to the assessment outcomes and conclusions provided in **Sections 25.9 to 25.15** within **Chapter 25** of the **PEIR**.

ACR-04d&b

3.6.9.3 ACR-04d&b largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. Therefore, considering the implementation of embedded environmental measures¹⁸, there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25** of the **PEIR**.

3.6.10 Historic environment

ACR-04a&b

3.6.10.1 ACR-04a&b does not change the assessment outcome or conclusions for designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) identified at PEIR (see **Table G-14** in **Appendix G**, noting commitments³³), presented in **Sections 26.9 to 26.15** within **Chapter 26** of the **PEIR**, nor does it introduce effects on any new designated heritage assets.

3.6.10.2 ACR-04a lies adjacent to a HER record for earthworks of uncertain date. The precise location of the earthworks is uncertain; however, the HER suggests these may relate to possible redoubts (military emplacements) as observed in the 1980s, one either side of the valley. The one on the north side is reportedly ploughed out but the one on the south side apparently can still be visible. Neither are visible on the modern satellite imagery. The description suggests that should they be present, they are unlikely to be located within ACR-04a along the bottom of the valley and will therefore not be impacted by construction.

3.6.10.3 ACR-04b encounters two additional known non-designated heritage assets:

³³ See **Appendix F**: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

- Bronze Age barrow (MWS3018); and
- Roman lynchet (MWS3019).

- 3.6.10.4 The HER record indicates that the Bronze Age barrow (MWS3018) was excavated in the early 20th century for the purposes of extracting flint. During this extraction, a Bronze Age cremation burial, half a sandstone rubber and oyster shells were excavated. No trace of the barrow is reportedly visible, and cropmarks have not been observed on modern satellite imagery. The survival of any buried remains of this barrow is considered very unlikely and if present will be severely truncated and will therefore be of low heritage significance. Construction activities are likely to completely remove any residual trace remains of the barrow, should they be present. Taking into consideration the expected extent and condition of any surviving barrow remains, the adverse impact will be of low to medium magnitude, leading to a minor adverse effect which will be permanent and is **Not Significant** in EIA terms.
- 3.6.10.5 A lynchet from which Roman pottery fragments have historically been recovered (MWS3019) crosses ACR-04b at an oblique angle. The HER record measures approximately 820m, with 340m lying within ACR-04b. The feature is recorded as a steep bank in the 1970s, but its current condition is uncertain. This heritage asset is of low heritage significance which is primarily drawn from archaeological interests. Construction activities will bisect this feature, removing a significant sized section of it. This adverse impact is likely to be of medium to high magnitude, which could lead to a potentially significant adverse effect, which will be permanent. However, further information obtained by field investigations and any subsequent proposed environmental measures will be used to seek to limit the magnitude and overall effect on archaeological receptors to a low to medium magnitude, which will be **Not Significant** in EIA terms.
- 3.6.10.6 There is still potential for as yet unknown archaeological remains to be present within ACR-04a&b.
- 3.6.10.7 ACR-04a&b does not introduce other new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions regarding these receptor types to what was presented at PEIR in **Section 26.9** within **Chapter 26** of the **PEIR**.

ACR-04a&c

- 3.6.10.8 ACR-04a&c does not change the assessment outcome or conclusions for designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) identified at PEIR (see **Table G-14** in **Appendix G**, noting commitments³⁴) (**Sections 26.9** to **26.15** within **Chapter 26** of the **PEIR**), nor does it introduce effects on any new designated heritage assets.
- 3.6.10.9 ACR-04a lies adjacent to a HER record for earthworks of uncertain date. The precise location of the earthworks is uncertain; however the HER record suggests these may relate to possible redoubts (military emplacements) as observed in the 1980s, one on either side of the valley. The one on the north side is reportedly

³⁴ See **Appendix F**: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

ploughed out but the one on the south side apparently can still be visible. Neither are visible on the modern satellite imagery. The description suggests that should they be present, they are unlikely to be located within ACR-04a along the bottom of the valley and will therefore not be impacted by construction.

- 3.6.10.10 ACR-04a&c does not introduce other new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions regarding these receptor types to what was presented at PEIR stage (**Section 26.9** within **Chapter 26** of the **PEIR**).

ACR-04d&b

- 3.6.10.11 ACR-04d&b does not change the assessment outcome or conclusions for designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) identified at PEIR (see **Table G-14** in **Appendix G**, noting commitments³⁵) in **Sections 26.9** to **26.15** within **Chapter 26** of the **PEIR**, nor does it introduce effects on any new designated heritage assets.
- 3.6.10.12 ACR-04d does not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change the assessment outcomes and conclusions for these receptor types than was presented at PEIR stage (**Section 26.9** within **Chapter 26** of the **PEIR**).
- 3.6.10.13 ACR-04b encounters two additional known non-designated heritage assets:
- Bronze Age barrow (MWS3018); and
 - Roman lynchet (MWS3019).
- 3.6.10.14 Bronze Age barrow (MWS3018), in addition to those already identified at PEIR. The HER record indicates that this feature was excavated in the early 20th century for the purposes of extracting flint. During this extraction, a Bronze Age cremation burial, half a sandstone rubber and oyster shells were excavated. No trace of the barrow is reportedly visible, and cropmarks have not been observed on modern satellite imagery. The survival of any buried remains of this barrow is considered very unlikely and if present will be severely truncated and will therefore be of low heritage significance. Construction activities are likely to completely remove any residual trace remains of the barrow, should they be present. Taking into consideration the expected extent and condition of any surviving barrow remains, the adverse impact will be of low to medium magnitude, leading to a minor adverse effect which will be permanent and is **Not Significant** in EIA terms.
- 3.6.10.15 A lynchet from which Roman pottery fragments have historically been recovered (MWS3019) crosses ACR-04b at an oblique angle. The HER record measures approximately 820m, with 340m lying within ACR-04b. The feature is recorded as a steep bank in the 1970s but its current condition is uncertain. This heritage asset is of low heritage significance which primarily drawn from archaeological interests. Construction activities will bisect this feature, removing a significant sized section of it. This adverse impact is likely to be of medium to high magnitude, which could lead to a potentially significant adverse effect, which will be permanent. However,

³⁵ See **Appendix F**: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

further information obtained by field investigations and any subsequent proposed environmental measures will be used to seek to limit the magnitude and overall effect on archaeological receptors to a low to medium magnitude, which will be **Not Significant** in EIA terms.

- 3.6.10.16 There is still potential for as yet unknown archaeological remains to be present within ACR-04b. However, ACR-04b does not introduce other new known archaeological receptors or other non-designated heritage assets, and there is no change the assessment outcomes and conclusions for the receptors presented at PEIR stage in **Section 26.9** within **Chapter 26** of the **PEIR**.
- 3.6.10.17 ACR-04, taken together, does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26: Historic environment, Volume 2** of the **PEIR**. The assessment of effects on heritage assets will be updated in line with the final ES Assessment Boundary in the historic environment chapter presented in the ES.

3.6.11 Water environment

- 3.6.11.1 Three water environment receptors have been identified where there is a potential change in the magnitude of effect from that assessed **Chapter 27: Water environment, Volume 2** of the **PEIR**, (see **Tables G-15 to G-21** in **Appendix G** and commitments²⁵). This is the result of the addition of trenchless crossing construction methodologies (TC-08, TC-09 and TC-10) associated with all options at ACR-04 (ACR-04a&b, ACR-04a&c and ACR-04d&b) within sections of the Source Protection Zone 2 (SPZ2) along the Warningcamp valley and the associated risk of groundwater contamination from drilling fluid breakout towards:
- Warningcamp public water supply borehole (situated approximately 410m to the west of TC-08, and 420m to the south of ACR-04a and TC-10), Worthing Chalk aquifer (GB40701G505300);
 - groundwater WFD water body (directly underlying all of the ACR-04 options); and
 - Arun Valley, Watersfield to Arundel LWS (a system of ditches situated approximately 400m to the west of the TC-08 to TC-09 section, 580m to the west of KC-04a and 1.1km to the west of TC-10).
- 3.6.11.2 These receptors respectively have a High, Medium and Low receptor value. At PEIR stage, negligible effects were predicted for the open cut trenching proposals towards these receptors, resulting in Negligible – Minor (**Not Significant**) adverse effects. However, the change in the proposals to trenchless methodologies along with the potential presence of shallow groundwater in the Warningcamp valley means that there is a risk of drilling contamination from fluid breakout which could introduce a Low or Medium magnitude of effect which could be potentially **Significant**.
- 3.6.11.3 Available desktop information based on catchment conceptualisation work indicates that the source of the public water supply predominantly comes from the east and north-east of its identified SPZ. On this basis the ACR-04a&b and ACR-04a&c options (which are the only options to include TC-10) along the base of the valley could potentially have more interaction with the public water supply,

compared to the TC-08 to TC-09 option which appears to be sited outside of the catchment of the supply. ACR-04a&b and ACR-04a&c options are therefore considered to have a higher degree of risk associated with them. However, at this preliminary stage, there is a degree of uncertainty over the level of risk associated with both options, and a potentially significant effect cannot be discounted for both given the risks to the underlying aquifer, the public water supply and other features. At this preliminary stage, based on initial catchment conceptualisation work there appears to be less potential for karst features in the vicinity of ACR-04 compared to both LACR (LACR-01 and LACR-02) routes. Based on the same conceptual work there is even lower potential for karst features along the other ACR routes and their associated TCs (as described elsewhere in **Section 3**) therefore the other trenchless crossings pose less of a risk towards groundwater receptors in terms of overall potential for there being rapid sub surface pathways.

- 3.6.11.4 On this basis a detailed Hydrogeological Risk Assessment will be prepared to support the Water environment chapter in the ES. This will be undertaken to further understand the potential relationship between each of the two options and the public water supply and other potential 'receptors'. This will be supported by a site visit and conceptual cross sections to establish relative elevations and pathway linkages. This will assist in establishing whether there is a source - pathway - receptor link between the valley, the public water supply and/or other water features in the area and will consider additional embedded environmental measures where necessary to minimise potential water quality effects.
- 3.6.11.5 The ACR04a includes an option for a trenchless crossing compound at the centre of the Warningcamp Hill valley which is indicated to be at risk of surface and groundwater flooding. The trenchless crossing compound overlaps with areas indicated to be at a low – high risk of surface water flooding, based upon Environment Agency Risk of Flooding from Surface Water (RoSWF) mapping. This is likely to be an expression of the groundwater rising to the surface within the base of the Chalk valley during wetter weather conditions. A range of existing embedded environmental measures³⁶ will be employed to minimise the potential for flood risk towards construction personnel and equipment at this location. The risk of surface and groundwater flooding to construction activities at this location will also be further considered for the final Flood Risk Assessment to accompany the ES.

3.6.12 Major accidents and disasters

- 3.6.12.1 ACR-04 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the PEIR.

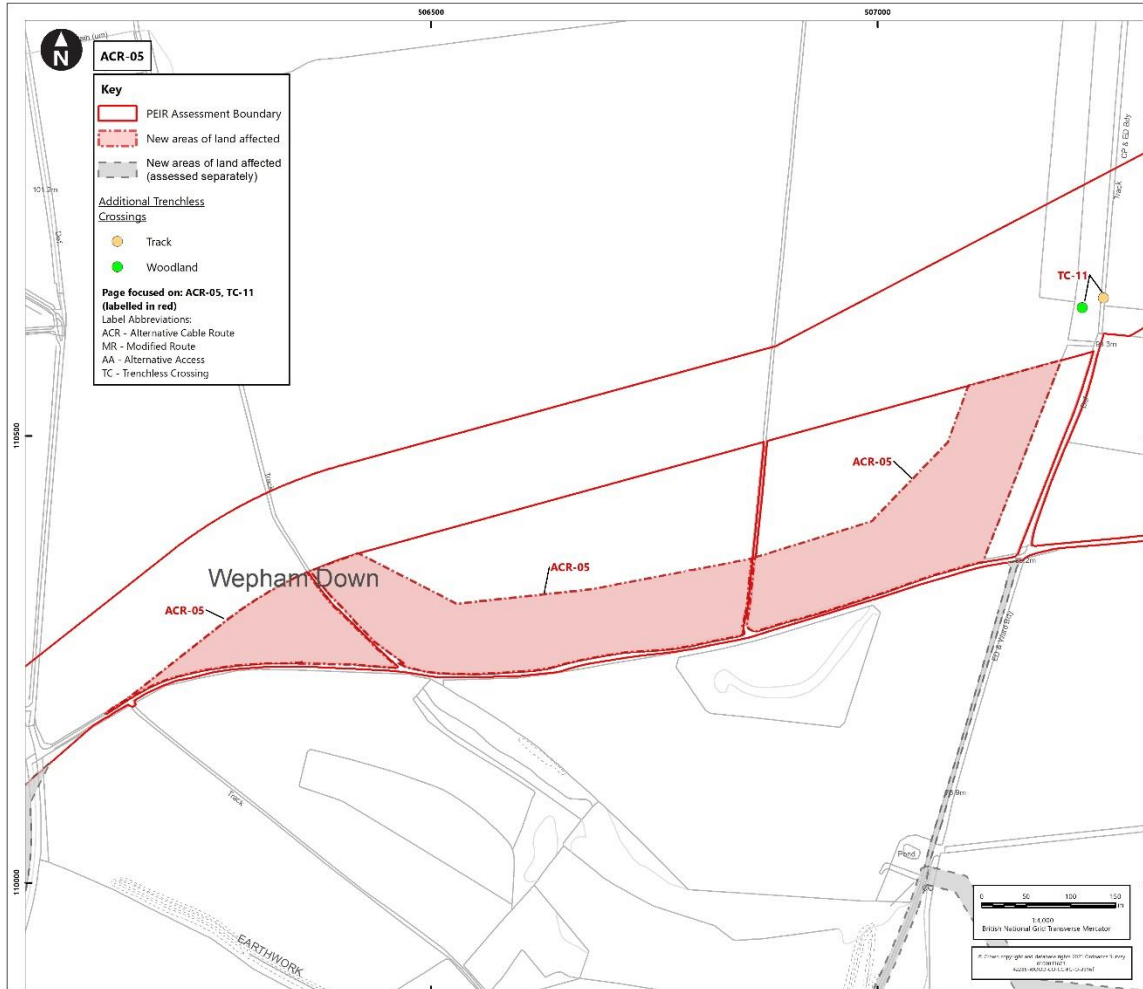
3.6.13 Greenhouse gas assessment

- 3.6.13.1 ACR-04 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the PEIR.

³⁶ See **Appendix F: C-117, C-118 and C-124.**

3.7 Alternative Cable Route -05 (ACR-05)

Graphic 3-5 ACR-05 (see Figure 15, Appendix A)



ACR-05 Environmental Review Overview

Additional sensitive receptors are introduced as a result of ACR-05 with a bridleway (socio-economics) and a site of a former medieval leper settlement (historic environment). Considering the implementation of embedded environmental measures, no new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR.

- 3.7.1.1 **Figures 16, 63 and 110 in Appendix B** outline the key environmental features relevant to ACR-05 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.7**.

3.7.2 Socio-economics

3.7.2.1 ACR-05 introduces an additional receptor (bridleway 3558-1) and on access land at Barpham Hill. The additional area has a potential to impact on access to and enjoyment of onshore recreation activity for these receptors. This is by increasing the proximity of onshore construction activities to the bridleway and to the access land. However, this does not lead to any additional significant residual effects (see **Table G-1** in **Appendix G**) to those presented in the PEIR. The socio-economics assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

3.7.2.2 Therefore, considering the implementation of embedded environmental measures¹², ACR-05 does not change the overall assessment outcomes and conclusions of the assessments of the assessments of economy, tourism economy and land and water-based recreation, presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR**.

3.7.2.3 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of onshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

3.7.3 Landscape and visual impact

3.7.3.1 ACR-05 is approximately 1.05km in length and crosses two fields within the SDNP and an area of the Arun Open Downs landscape character to the south of the original PEIR Assessment Boundary. The southern boundary follows PRow 3558-1 and will cross approximately two hedgerows/field boundaries that divide large arable fields. Ancient Woodland to the south of this area will be subject to a 25m standoff during construction as part of the embedded environmental measures³⁷. Visual receptors include people on the PRows and Open Access Land at

³⁷ see **Appendix F: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-27, C-29, C-32, C-33, C-66, C-67, C-81, C-82, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-200, C-202 and C-204.**

Barpham Hill, further to the south at approximately 0.4km distance. ACR-05 will affect the same receptors assessed in the PEIR. Considering the implementation of embedded environmental measures (**Appendix F**), ACR-05 does not change the environmental receptors or the overall assessment outcomes and conclusions (see the summary of residual effects **Tables G-2 – G-7** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.7.4 Air quality

- 3.7.4.1 ACR-05 does not introduce additional residential receptors. Therefore, ACR-05 does not change the outcome of the construction dust assessment and overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**.
- 3.7.4.2 ACR-05 includes an associated trenchless crossing (TC-11). The introduction of a trenchless crossing and associated compound may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4 of the PEIR**. However, this does not change the overall assessment and conclusions (see the summary of residual effects **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20** of the PEIR.
- 3.7.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.7.5 Soils and agriculture

- 3.7.5.1 ACR-05 does not introduce any new soils and agriculture receptors. The 1:250,000 MAFF provisional Agricultural Land Classification Map of England and Wales mapping shows that the ALC grade within ACR-05 is Grade 3. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-05 introduces an additional area of approximately 9.03ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR** conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).
- 3.7.5.2 The soils and agriculture assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha. The additional land in ACR-05 will increase this total by approximately 9.03ha. This equates to a 4.36% increase in the area of ground potentially subject to temporary disturbance during construction. When included within the total area as assessed at PEIR, this results in a small percentage increase. As there is no change to the environmental receptors or the embedded environmental measures¹⁴, ACR-05 does not change the assessment

outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

3.7.6 **Noise and vibration (onshore)**

3.7.6.1 ACR-05 does not introduce new noise sensitive receptors requiring consideration in the noise and vibration assessment in **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**.

3.7.6.2 Therefore, considering the implementation of embedded environmental measures (C-22, C-26, C-33 and C-160, see **Appendix F**), ACR-05 does not change the environmental receptors or the overall assessment outcomes and conclusions presented in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**.

3.7.7 **Terrestrial ecology and nature conservation**

3.7.7.1 ACR-05 crosses a number of arable fields with boundary features consisting of grass margins and hedgerows (with some infield beetle banks also present). These fields and boundary features (with hedgerows qualifying as HPI) are the same as those assessed at PEIR stage. Embedded environmental measures will be implemented (see **Appendix F** for relevant commitments) including C-6 and C199 as described in PEIR and C-115 updated since PEIR. **Appendix I** provides further information on embedded environmental measures specific to the Peppering Project area. Therefore, ACR-05 does not change assessment outcomes or conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23: Terrestrial ecology, Volume 2** of the **PEIR**.

3.7.8 **Transport**

3.7.8.1 ACR-05 includes one additional PRow receptor (3558-1) that will be incorporated into the **outline PRowMP** provided alongside the DCO Application.

3.7.8.2 ACR-05 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the **PEIR**.

3.7.8.3 ACR-05 does not change environmental receptors or the overall assessment outcomes and conclusions (see **Table G-12** in **Appendix G**) presented in **Sections 24.10** to **24.16** within **Chapter 24: Transport, Volume 2** of the **PEIR**.

3.7.8.4 The assessment of transport effects will be updated in line with the ES Assessment Boundary in **outline CTMP**, and the ES submitted alongside the DCO Application.

3.7.9 **Ground conditions**

3.7.9.1 ACR-05 largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. A small historical ground working listed as a Brit Pit entry is present at the edge of the western end of ACR-05 and was previously assessed in **Chapter 25: Ground conditions, Volume 2** of the **PEIR** based on it being immediately adjacent to a temporary construction and permanent access route.

3.7.9.2 Given the small size of the ground working, the fact it remains on the very edge of ACR-05 and the implementation of the embedded environmental measures¹⁸, ACR-05 does not change the assessment outcomes and conclusions (see **Table G-13 in Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25 of the PEIR**. The ground conditions assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

3.7.10 Historic environment

3.7.10.1 ACR-05 does not change the assessment outcomes or conclusions for those designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments) presented in **Sections 26.9 to 26.15** within **Chapter 26: Historic environment, Volume 2 of the PEIR**.

3.7.10.2 The HER record for the site of a former medieval leper settlement is located within ACR-05. The location is reportedly near Combe Log (historic farmstead no longer extant) where 14th century pottery has previously been found, though there is no documentary evidence for the existence of a leper settlement. Whilst this receptor was identified in the baseline at PEIR, it was only considered in relation to the Leper's Way, a historic route which crosses the original PEIR Assessment Boundary, and the general potential for remains of medieval activity within the vicinity. There are no extant remains or cropmarks traces observed in modern satellite imagery. Without further survey, it is assumed there is potential for buried remains associated with a former leper settlement within ACR-05. Such remains, if present, will likely be of low heritage significance for archaeological and historic interests. Construction activities are expected to remove entirely or significantly truncate any buried archaeological remains that may be present. This adverse impact is likely to be of medium to high magnitude, which could lead to a potentially significant adverse effect, which will be permanent. However, further information obtained by field investigations and any subsequent proposed embedded environmental measures (C-4, C-6, C-12, C-13 and C-79) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level, which will be **Not Significant** in EIA terms.

3.7.10.3 There is still potential for as yet unknown archaeological remains to be present within ACR-05. However, ACR-05 does not introduce other new known archaeological receptors or other non-designated heritage assets, and there is no change the assessment outcomes and conclusions for the receptors presented at PEIR stage (see **Table G-14 in Appendix G**, noting commitments²⁸) in **Section 26.9** within **Chapter 26 of the PEIR**.

3.7.11 Water environment

3.7.11.1 ACR-05 does not introduce new environmental receptors beyond those identified in the **Chapter 27: Water environment, Volume 2 of the PEIR**. Therefore, considering the implementation of embedded environmental measures²⁵, ACR-05 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27 of the PEIR**.

3.7.12 **Major accidents and disasters**

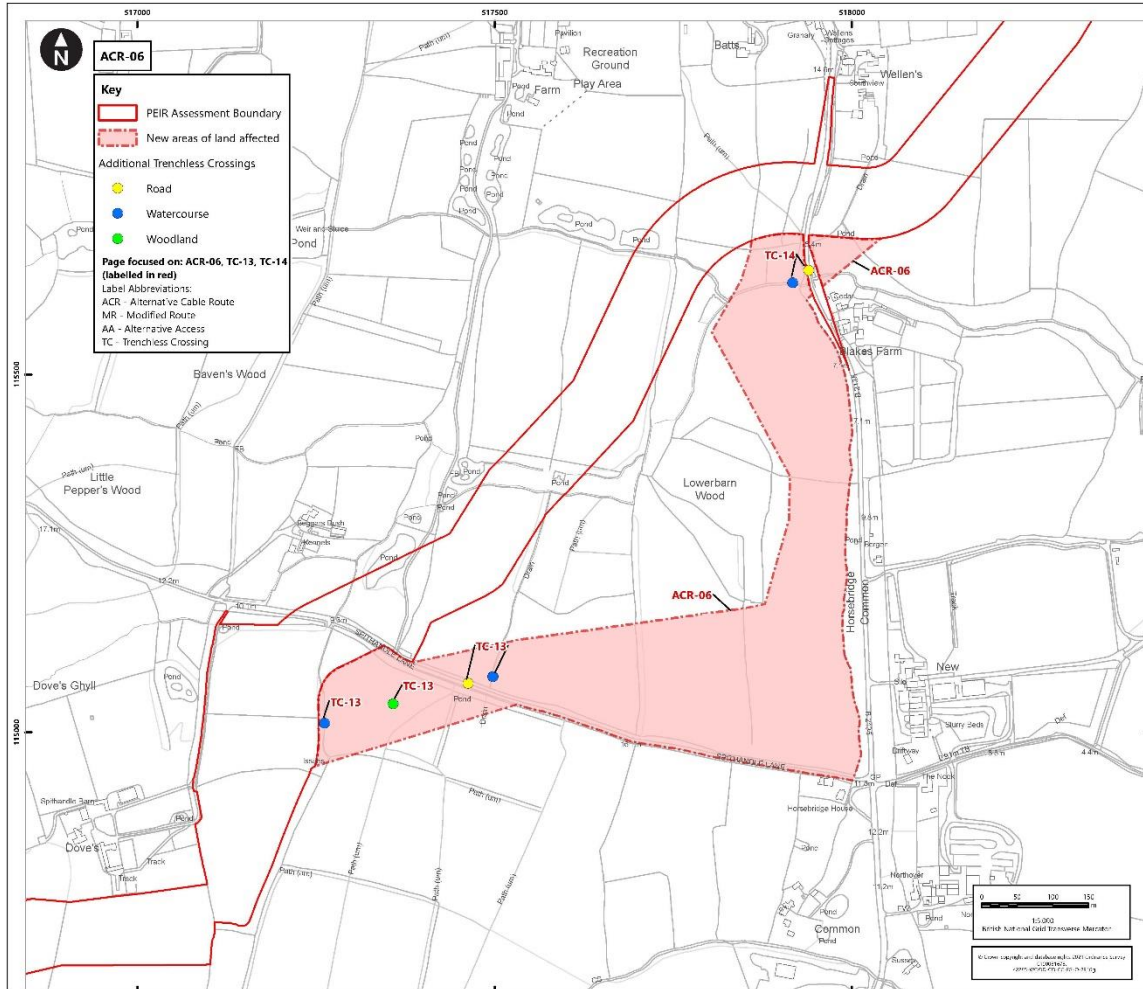
3.7.12.1 ACR-05 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

3.7.13 **Greenhouse gas assessment**

3.7.13.1 ACR-05 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the **PEIR**.

3.8 Alternative Cable Route -06 (ACR-06)

Graphic 3-6 ACR-06 (see Figure 22, Appendix A)



ACR-06 Environmental Review Overview

Additional sensitive receptors introduced as a result of ACR-06 include socio-economics, air quality and noise and vibration receptors. Some changes in the magnitude of impact will be experienced by three designated heritage assets. Considering the implementation of embedded environmental measures, no new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR.

3.8.1.1 **Figures 23, 70 and 117 in Appendix B** outline the key environmental features relevant to ACR-06 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.8**.

3.8.2 Socio-economics

3.8.2.1 ACR-06 will have potential to impact on an additional receptor identified as Horsebridge Common which is located partially within the ACR-06 boundary and requires further consideration in the assessment. ACR-06 has a potential to impact on access to and enjoyment of onshore recreation activity for this receptor. The implementation of a trenchless crossing at the B2135 and River Adur (TC-14) reduces potential impact on Horsebridge Common. Therefore, ACR-06 does not lead to any additional significant residual effects (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR**. The socio-economics assessment will be updated in line with the ES Assessment Boundary and presented at ES.

3.8.2.2 Therefore, considering the implementation of embedded environmental measures¹², ACR-06 does not change the overall assessment outcomes and conclusions of the assessments of economy, tourism economy and land and water-based recreation, presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.

3.8.2.3 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the Offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

3.8.3 Landscape and visual impact

3.8.3.1 ACR-06 introduces a trenchless crossing at Spithandle Lane (TC-13) with the onshore cable passing under Spithandle Lane, Calcot Wood, connecting hedges to Calcot Wood and Square Corpse, roadside hedges, and a stream. Landscape and visual effects will be minimal with the trenchless crossing largely screened from view and the works approximately 100m southeast from Beggar's Bush and nearby residential receptors. Further receptors to the east of ACR-06 include the B2135, a small number of residential receptors and two small campsites which will have minimal visual effects due to screening from intervening mature roadside vegetation along much of the B2135 allowing of occasional winter views. There will

be no additional landscape receptors (including landscape character areas) affected as a result of ACR-06.

- 3.8.3.2 Between Spithandle Lane and the trenchless crossing of the B2135 (TC-14), ACR-06 follows field boundaries but allows a standoff to protect trees outside the onshore cable corridor which screen visual receptors (Spithandle Lane and the B2135 and associated residents, PRoW and common land).
- 3.8.3.3 ACR-06 crosses three hedgerows with mature trees. The implementation of a trenchless crossing at B2135 (TC-14) will avoid effects on landscape character and elements including woodland, watercourses and hedgerows in this location. The associated trenchless crossing compound will be approximately 100m to the west of Blakes Farm, although retained vegetation will mitigate visual effects at Blakes Farm, users of the B2135 and users of the PRoWs either side of the B2135.
- 3.8.3.4 Therefore, considering the implementation of embedded environmental measures³⁸, ACR-06 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-2 – G-7** in **Appendix G**) presented in **Paragraphs 19.9.71, 19.1.34 and 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.8.4 Air quality

- 3.8.4.1 ACR-06 introduces new residential receptors within 350m along the B2135. A construction dust assessment undertaken at PEIR stage considered the different construction activities (i.e., earthworks, trackout) in relation to their proximity to sensitive receptors, in order to identify appropriate embedded environmental measures. The introduction of new receptors as part of the ACR-06 will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26** from **Chapter 20**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**.
- 3.8.4.2 ACR-06 includes two trenchless crossings, one at Spithandle Lane (TC-13) and the other at the B2135 (TC-14). The trenchless crossing of Spithandle Lane (TC-13) does not introduce new air quality receptors or change the existing air quality assessment provided in the PEIR. The introduction of a trenchless crossing and associated compound at the B2135 (TC-14) is in closer proximity to nearby receptors along the B2135. The air quality assessment in the PEIR considered emissions associated with trenchless crossings by undertaking air dispersion modelling to predict impacts on sensitive receptors. Whilst the introduction of a trenchless crossing and associated compound closer to nearby receptors may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4, of the PEIR**. This does not change the overall assessment and

³⁸ See **Appendix F: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-23, C-27, C-29, C-32, C-33, C-81, C-82, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-202, C-204, C-308, and C-317**.

conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22** and **20-26** from **Chapter 20**) provided in **Sections 20.9** to **20.15** within **Chapter 20** of the **PEIR**.

3.8.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.8.5 Soils and agriculture

3.8.5.1 ACR-06 does not introduce any new soils and agriculture receptors. The 1:250,000 MAFF provisional Agricultural Land Classification Map of England and Wales mapping shows that the ALC grades within ACR-06 are Grades 3 and 4². For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-06 introduces an additional area of approximately 0.36ha requiring assessment in the ES. The assessment provided in **Sections 21.9** to **21.13** within **Chapter 21: Soils and agriculture, Volume 2** of the **PEIR** conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).

3.8.5.2 The soils and agriculture assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR stage as 206.95ha. The additional land in ACR-06 will increase this total by approximately 0.36ha. This equates to a 0.17% increase in the area of ground potentially subject to temporary disturbance during construction. ACR-06 introduces a relatively small area which, when included within the total area as assessed at PEIR stage, results in a very minor percentage increase in the area of ground potentially subject to temporary disturbance during construction. Therefore, ACR-06 will not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**, taking account of embedded environmental mitigation¹⁴) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

3.8.6 Noise and vibration (onshore)

3.8.6.1 ACR-06 introduces new residential receptors on the B2135 which are approximately 50m from ACR-06 and onshore cable trenching activities. Although new residential receptors have been identified on the B2135 as a result of ACR-06, considering the implementation of embedded environmental measures, this does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**.

3.8.6.2 The trenchless crossing at Spithandle Lane (TC-13) is approximately 270m from the nearest sensitive receptor assessed at PEIR stage and also introduces a new residential receptor approximately 300m to the west. The trenchless crossing at the B2135 (TC-14) introduces a new residential receptor approximately 170m east of the likely trenchless crossing compound for TC-14. Although new residential receptors are introduced as a result of trenchless crossings associated with ACR-06, considering the implementation of embedded environmental measures

(C-22, C-26, C-33 and C-160, see **Appendix F**), this does not change the overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22** of the **PEIR**.

- 3.8.6.3 ACR-06 includes a temporary construction access along Spithandle Lane (included within the onshore cable corridor and not identified as a new access), adjacent to one residential receptor. However, it is unlikely that the flow of traffic will be sufficient to result in a significant noise effect. Therefore, it is not expected that ACR-06 will change the overall assessment outcomes and conclusions in **Section 22.9** within **Chapter 22** of the **PEIR**.
- 3.8.6.4 ACR-06 will not change the overall assessment as included within the PEIR. Therefore, as outlined above, although ACR-06 introduces new sensitive receptors (along the B2135) and trenchless crossings (TC-13 and TC-14) not identified at PEIR stage, this does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9** to **22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

3.8.7 **Terrestrial ecology and nature conservation**

- 3.8.7.1 The area within ACR-06 consists of plantation woodland, including a small area of Ancient Woodland (replanted), improved grassland, arable fields, hedgerows (HPI) and treelines. ACR-06 does not lie within or adjacent to any statutory or non-statutory sites. The woodland crossed by ACR-06 is named Calcot Wood, of which the majority is listed on the Ancient Woodland Inventory as PAWS. However, the majority of ACR-06 is located within sections that are of more modern origin. There is a known great crested newt population present within the original PEIR Assessment Boundary (no ponds are present in ACR-06 with the nearest approximately 165m to the west). A range of breeding birds, bats and badgers have been recorded using the local woodlands, tree lines and hedgerows.
- 3.8.7.2 The trenchless crossings (TC-13 and TC-14) will pass under some of the most sensitive habitats including Ancient Woodland (replanted), plantation woodland, a watercourse and several of the hedgerows/tree lines present. The trenchless crossing under Ancient Woodland (TC-13) will have a minimum depth of 6m to ensure damage to root systems can be avoided (99% of tree roots occur in the top 2m of soil). The habitats crossed by open cut trenching (or to aid access) are similar to those elsewhere within the original PEIR Assessment Boundary (e.g., pasture fields, hedgerows). The additional areas that will be temporarily lost are small and are not large enough to alter the outcome of the assessment outlined at PEIR stage, especially when considering the implementation of embedded environmental measures and inclusion of trenchless crossings within the design. Therefore, considering the implementation of embedded environmental measures²⁷ (including the reduction in temporary hedgerow loss to a maximum of 14m per crossing, from 30-50m listed in the PEIR), there is no change to the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) provided in **Sections 23.10** to **23.14** within **Chapter 23: Terrestrial ecology, Volume 2** of the **PEIR**.

3.8.8 Transport

- 3.8.8.1 ACR-06 includes a new temporary construction access from Spithandle Lane and this will be reflected in the **outline CTMP** provided alongside the DCO Application. ACR-06 includes two trenchless crossings, one crossing Spithandle Lane (TC-13) and one crossing the B2135 (TC-14). ACR-06 does not change environmental receptors or the overall assessment outcomes and conclusions presented in **Sections 24.10 to 24.16** within **Chapter 24: Transport, Volume 2** of the **PEIR**.
- 3.8.8.2 ACR-06 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the **PEIR**.
- 3.8.8.3 The assessment of transport effects will be updated in line with the ES Assessment Boundary in **outline CTMP**, and the ES submitted alongside the DCO Application.

3.8.9 Ground conditions

- 3.8.9.1 ACR-06 largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any minerals safeguarding areas. Therefore, considering the implementation of embedded environmental measures¹⁸, there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

3.8.10 Historic environment

- 3.8.10.1 In line with the assessment methodology presented in **Section 26.8** within **Chapter 26: Historic environment, Volume 2** of the **PEIR**, three designated heritage assets have been identified where there is a potential change in the magnitude of effect from that assessed at PEIR stage. This change is largely resulting from the close proximity of these assets to ACR-06, which is considered likely to increase the perceptibility of construction activities affecting the setting of these designated heritage assets:
- Horsebridge House (1027454) – within 20m of ACR-06 boundary, on the opposite side of Spithandle Lane;
 - Blakes Farmhouse (1353943) – within 40m of ACR-06 boundary, on the opposite side of the B2135; and
 - Bergen-op-Zoom Cottage (1393335) – within 50m of ACR-06 boundary, on the opposite side of the B2135.
- 3.8.10.2 These designated heritage assets are of high heritage significance primarily for their architectural interests (in line with criteria set out in **Table 26-20** within **Chapter 26** of the **PEIR**).
- 3.8.10.3 At PEIR stage, no effects were anticipated for Horsebridge House (1027454) or Bergen-op-Zoom Cottage (1393335) and only a very low magnitude of change resulting in a minor adverse effect for Blakes Farmhouse (1353943), as presented in **Table 26-26** within **Chapter 26** of the **PEIR**. ACR-06 is considered likely to

introduce a low magnitude of change resulting in a moderate adverse effect, which according to the classification of effects set out in the PEIR, could potentially be significant. However, taking into consideration the following points and implementation of embedded environmental measures, the assessment of residual effects on these designated heritage assets will be **Not Significant**:

- existing screening from the intervening tree lines minimising visibility of the Proposed Development from heritage assets;
- intervening roads which contribute to the existing noise environment and visual setting experienced by these assets; and
- temporary changes to setting limited to the construction phase.

3.8.10.4 Therefore, considering the implementation of embedded environmental measures, ACR-06 does not change the assessment outcome or conclusions for any other designated heritage assets (e.g., Conservation Areas, listed buildings, scheduled monuments), as presented in **Sections 26.9 to 26.15** within **Chapter 26** of the **PEIR**.

3.8.10.5 ACR-06 does not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change the assessment outcomes and conclusions for these receptor types than was presented at PEIR stage (see **Table G-14** in **Appendix G**, noting commitments³⁹) in **Section 26.9** within **Chapter 26** of the **PEIR**. ACR-06 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26** of the **PEIR**.

3.8.10.6 There are no other changes to the overall assessment outcomes or conclusions provided in **Sections 26.9 to 26.15** within **Chapter 26** of the **PEIR**. The assessment of designated heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

3.8.11 Water environment

3.8.11.1 The area within ACR-06 includes two tributaries of the River Adur, which are both Ordinary Watercourses³ and identified as environmental receptors in **Chapter 27: Water environment, Volume 2** of the **PEIR**. ACR-06 crosses the western watercourse tributary of the River Adur by trenchless crossing at Spithandle Lane (TC-13) and crosses the eastern tributary of the River Adur at the B2135 (TC-14). The entry and exit pits of the trenchless crossings of both tributaries are situated outside of the Environment Agency RoSWF zones. **Paragraph 27.6.25** and **Table 27.6** of **Chapter 27** of the **PEIR** also identifies water environment receptors including a pond between Blakes Farm and Sweethill Farm and the Adur (GB540704116000) WFD water body which interact with ACR-06. ACR-06 does not introduce new water environment receptors beyond those identified in the **Chapter 27** of the **PEIR**.

3.8.11.2 Therefore, considering the implementation of embedded environmental measures²⁵, ACR-06 does not change the environmental receptors or the overall

³⁹ See **Appendix F**: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157.

assessment outcomes and conclusions (see **Tables G-15 to G-21** in **Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the **PEIR**.

3.8.12 Major accidents and disasters

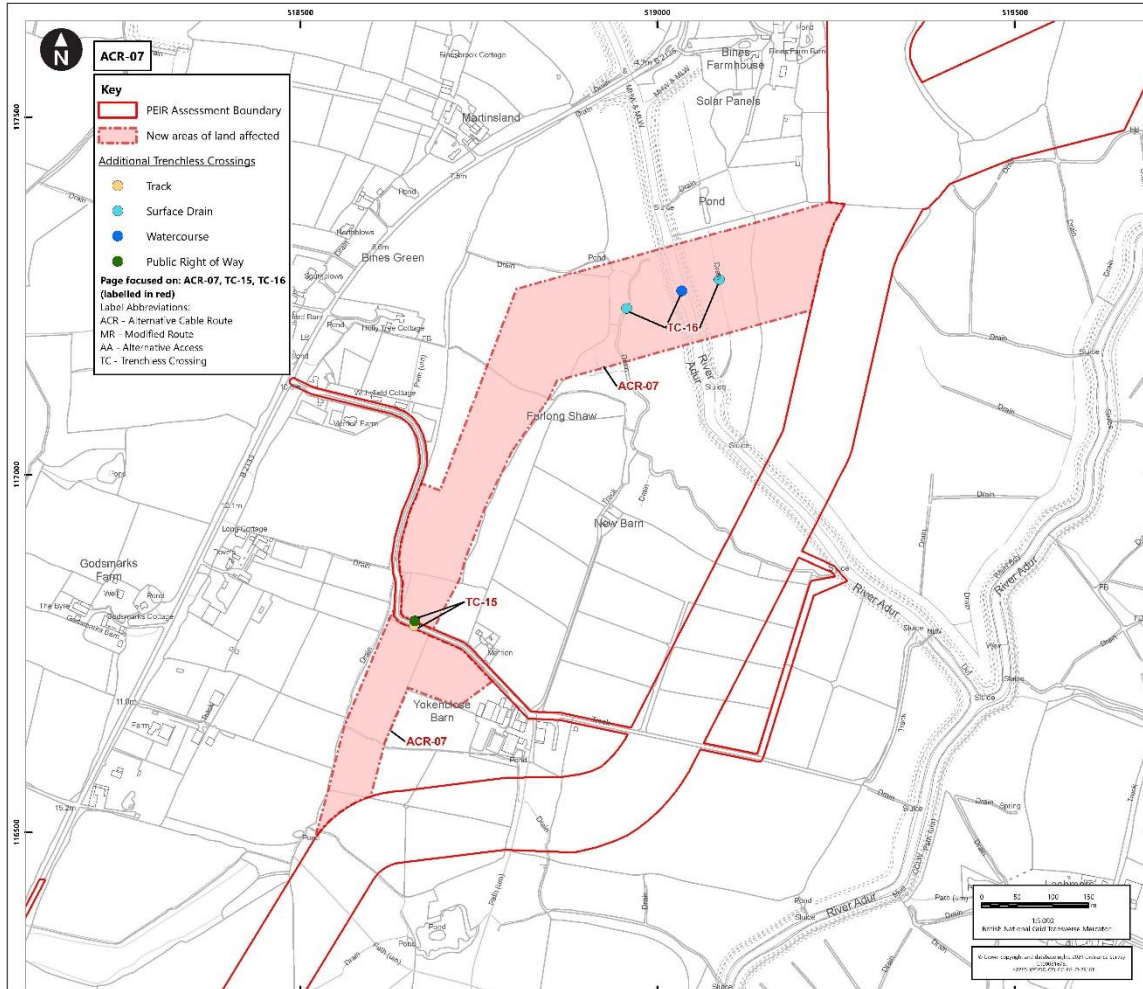
3.8.12.1 ACR-06 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

3.8.13 Greenhouse gas assessment

3.8.13.1 ACR-06 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 2** of the **PEIR**.

3.9 Alternative Cable Route -07 (ACR-07)

Graphic 3.7 ACR-07 (see Figure 24, Appendix A)



ACR-07 Environmental Review Overview

Additional sensitive receptors introduced as a result of ACR-07 include socio-economics, air quality, terrestrial ecology and noise and vibration. Some changes in the magnitude of impact will be experienced by two designated heritage assets. Considering the implementation of embedded environmental measures, no new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the PEIR.

- 3.9.1.1 **Figures 25, 72 and 119 in Appendix B** outline the key environmental features relevant to ACR-07 including statutory and non-statutory designations where appropriate. These plans do not outline every environmental feature, just those key features/designations relevant to the environmental review outlined within **Section 3.9**.

3.9.2 Socio-economics

- 3.9.2.1 ACR-07 introduces additional receptors including footpath 2519 and Bines Green Common. The additional area has the potential to impact on access to and enjoyment of onshore recreation activity for these receptors. However, this does not lead to any additional significant residual effects (see **Table G-1 in Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR**. The socio-economics assessment will be updated in line with the ES Assessment Boundary and presented at ES.
- 3.9.2.2 Therefore, considering the implementation of embedded environmental measures¹², ACR-07 does not change the overall assessment outcomes and conclusions of the assessments of economy, tourism economy and land and water-based recreation presented in **Sections 18.9 to 18.15** within **Chapter 18 of the PEIR**.
- 3.9.2.3 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR SIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):
- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
 - the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
 - the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR (ranging from Not Significant to Significant)**.

3.9.3 Landscape and visual impact

- 3.9.3.1 ACR-07 is approximately 1.1km in length and crosses an area of the Upper Adur Valley that will affect part of the O3) Steyning & Henfield Brooks landscape character area to the northwest of the original PEIR Assessment Boundary. Two trenchless crossings are proposed, one at PRoW 2519 (TC-15) which will include the hedgerows and trees on either side of the PRoW and a further trenchless crossing of the River Adur (TC-16). Up to four hedgerows with mature trees will be crossed by the onshore cable corridor and subject to the embedded environmental measures. The landscape effects will fall within the range previously assessed in the PEIR, although affecting different geographical areas.
- 3.9.3.2 Visual receptors are likely to be limited to road users and residential properties along the B2135 and potentially, residential properties associated with Bines Farm and Yokenclose Farm. The route of ACR-07 will be located approximately 250m

closer to the B2135 and is likely that the effects previously assessed in the PEIR will increase. However, although affecting a different geographical area, due to intervening screening the effects are not likely to be significant and will fall within the range previously assessed in the PEIR. The views from residential properties associated with Yokenclose Farm will immediately border the boundary and may be significantly affected. These will be assessed as part of a Residential Visual Amenity Assessment in the ES.

- 3.9.3.3 Considering the implementation of embedded environmental measures³⁸, ACR-07 does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-7 in Appendix G**) on the landscape and visual receptors presented in **Sections 19.9 to 19.14 within Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**. The likely effects will fall within the range previously assessed in the PEIR, although affecting different geographical areas of the landscape and visual receptors. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

3.9.4 Air quality

- 3.9.4.1 ACR-07 introduces new residential receptors with 350m along the B2135. A construction dust assessment undertaken at PEIR stage considered the different construction activities (i.e. earthworks, trackout) in relation to their proximity to sensitive receptors, in order to identify appropriate mitigation. The introduction of new receptors as part of the ACR-07 will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26 from Chapter 20 of the PEIR**) provided in **Sections 20.9 to 20.15 within Chapter 20: Air quality, Volume 2 of the PEIR**.
- 3.9.4.2 ACR-07 includes two trenchless crossings (TC-15 and TC-16) that are positioned close to residential receptors. The new trenchless crossings introduce new air quality receptors but are unlikely to change the existing air quality assessment provided in the PEIR. The air quality assessment in the PEIR considered emissions associated with trenchless crossing by undertaking air dispersion modelling to predict impacts on sensitive receptors. The introduction of trenchless crossings and associated compound closer to nearby receptors may result in potential changes in emissions calculated in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4 of the PEIR**. However, this does not change the overall assessment and conclusions (see **Table G-8 in Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26 from Chapter 20**) provided in **Sections 20.9 to 20.15 within Chapter 20 of the PEIR**.
- 3.9.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the ES Assessment Boundary and presented in the updated air quality chapter in the ES.

3.9.5 Soils and agriculture

- 3.9.5.1 ACR-07 does not introduce any new soils and agriculture receptors. The 1:250,000 MAFF provisional Agricultural Land Classification Map of England and

Wales mapping shows that the ALC grades within ACR-07 are Grades 3 and 4. For the ES, further soil survey and ALC survey data will be available to further confirm the ALC grades. ACR-07 introduces an additional area of approximately 11.80ha requiring assessment in the ES. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR** conservatively assumes that all MAFF Grade 3 agricultural land is sub-grade 3a (best and most versatile).

- 3.9.5.2 The Grade 3 ALC classification indicates good to moderate agricultural land, meaning land with moderate limitations affecting choice of crops, timing, type of cultivation, harvesting and level of yield. Grade 3 land is divided into two subgrades designated as 3a and 3b. Grade 3a (good quality agricultural land) is defined as best and most versatile (BMV) land, while Grade 3b (moderate quality agricultural land) is not BMV. Grade 4 indicates poor quality agricultural land, meaning land with severe limitations on the range of viable crops and level of yields, which is mainly suited to grass with occasional arable crops such as cereals and forage crops. Grade 4 can also include arable land that is very dry because of drought.
- 3.9.5.3 The soils and agriculture assessment in the PEIR is based upon the total area of land where soil or agriculture receptors could be affected by Rampion 2. The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR as 206.95ha. The additional land in ACR-07 will increase this total by 11.80ha. This equates to a 5.7% increase in the area of ground potentially subject to temporary disturbance during construction. As there is no change to the environmental receptors or the embedded environmental measures¹⁴, ACR-07 does not change the assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9 to 21.13** within **Chapter 21** of the **PEIR**.

3.9.6 Noise and vibration (onshore)

- 3.9.6.1 ACR-07 introduces new residential receptors along Bines Road and in particular a house accessed along a private drive which will be now adjacent to the onshore cable corridor.
- 3.9.6.2 The onshore cable construction activities associated with ACR-07 will be temporary and embedded environmental measures¹⁵ will be implemented to minimise noise disturbance. Therefore, considering the implementation of embedded environmental measures, ACR-07 does not change overall assessment outcomes and conclusions of the onshore cable installation (trenched) assessment provided in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**.
- 3.9.6.3 ACR-07 includes two trenchless crossings (TC-15 and TC-16) crossing Bines Road and the River Adur which are situated approximately 60m and 200m respectively to noise sensitive receptors. Although ACR-07 introduces new trenchless crossings, considering the implementation of embedded environmental measures, there is no change to the overall assessment outcomes and conclusions of the trenchless crossings assessment provided in **Section 22.9** within **Chapter 22** of the **PEIR**.

3.9.6.4 Therefore, considering the implementation of embedded environmental measures (C-22, C-26, C-33 and C-160, see **Appendix F**), ACR-07 does not change the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) provided in **Sections 22.9 to 22.15** within **Chapter 22** of the **PEIR**. The construction noise predictions and modelling will be updated in line with the ES Assessment Boundary in the noise and vibration assessment and presented at ES.

3.9.7 **Terrestrial ecology and nature conservation**

3.9.7.1 The additional area associated with ACR-07 lies partially within an area of Coastal and Floodplain Grazing Marsh (a habitat of principal importance (HPI)). This habitat is also functionally linked to the Arun Valley SPA and Ramsar site as it provides areas used by designated features of these site (e.g. certain wildfowl) for feeding/loafing, although it lies outside any designation boundary. The additional area of HPI is immediately adjacent to the river and will be crossed by trenchless crossing, thereby avoiding losses.

3.9.7.2 All other habitats crossed by ACR-07 are typical of those in onshore part of the original PEIR Assessment Boundary in the immediate vicinity (e.g. arable and pasture fields). The inclusion of these habitats will not alter the assessment outcome and conclusions (see **Table G-11** in **Appendix G**) provided in **Sections 23.10 to 23.14** within **Chapter 23: Terrestrial ecology, Volume 2** of the **PEIR**. Neither will the grazing marsh given that it will not be subject to temporary losses and there will be a seasonal restriction in place to negate the effects of disturbance on waders and wildfowl (see **Appendix F** for relevant commitments namely C-21, C-64, C-76, C-135 and C-199 as described in PEIR and C-117 updated since PEIR); further detail is provided in **Appendix I**.

3.9.8 **Transport**

3.9.8.1 ACR-07 includes one additional public rights of way (PRoW) (2519) receptor that will be incorporated into the **outline PRoWMP** provided alongside the DCO Application.

3.9.8.2 ACR-07 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the **PEIR**.

3.9.8.3 ACR-07 in isolation does not change environmental receptors or the overall assessment outcomes and conclusions (see **Table G-12** in **Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24: Transport, Volume 2** of the **PEIR**.

3.9.8.4 The assessment of transport effects will be updated in line with the ES Assessment Boundary in **outline CTMP**, **outline PRoWMP** and the ES submitted alongside the DCO Application.

3.9.9 **Ground conditions**

3.9.9.1 ACR-07 largely passes through undeveloped agricultural fields and does not introduce any potential new sources of contamination or interact with any new minerals safeguarding areas. Therefore, considering the implementation of

embedded environmental measures¹⁸, there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

3.9.10 Historic environment

- 3.9.10.1 Two designated heritage assets have been identified where there is a potential change in the magnitude of effect from that assessed at PEIR stage. ACR-07 lies within 150m of the grade II listed building Hollybush Cottage (1191821) and 240m of the grade II listed building Doves Cottage (1191816). These designated heritage assets are of high heritage significance primarily for their architectural interests in line with criteria set out in **Table 26-20** within **Chapter 26: Historic environment, Volume 2** of the **PEIR**.
- 3.9.10.2 Hollybush Cottage is set back from the B2153 within a garden plot with tall hedge and tree planting on the south and east sides which heavily restrict views to and from the asset, and more sporadic planting to the north and west which allow filtered views. The only known historic connection between the cottage and agricultural land to the east through which ACR-07 crosses, is evidenced by Tithe mapping and apportionments which show both were owned by William John Campion but had different tenants in the mid-1800s.
- 3.9.10.3 Doves Cottage is set back from the B2153 within a garden plot bordered on the north, west and south sides by tall hedges and trees. To the rear, on the east side, are agricultural buildings and a large rectangular field in use a paddocks, which is also bordered by tall hedges and trees. There is very limited visibility of the agricultural land to the east through which ACR-07 crosses, and there is also no known historic connection between this land and Doves Cottage.
- 3.9.10.4 ACR-07 may increase the perceptibility of construction activities from these designated heritage assets but this is expected to be experienced as audible changes, rather than visual, due to the very limited visual connection between these assets and the land through which ACR-07 crosses. Construction activities within ACR-07 will alter the rural character of this landscape having a limited impact on heritage interests. However, these changes will be time-limited and any adverse effects will be temporary.
- 3.9.10.5 ACR-07 is considered likely to introduce a very low magnitude of change to the setting of Doves Cottage resulting in a minor adverse effect, which will be **Not Significant**.
- 3.9.10.6 ACR-07 is considered likely to introduce a low magnitude of change to the setting of Hollybush Cottage resulting in a moderate adverse effect, which according to the classification of effects set out in the **PEIR**, could potentially be significant. However, taking into consideration the discussion above, the assessment of residual effects on these designated heritage assets will be **Not Significant**.
- 3.9.10.7 ACR-07 does not introduce other new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions for these receptor types than was presented at PEIR

stage (see **Table G-14** in **Appendix G**, noting commitments⁴⁰) in **Section 26.9** within **Chapter 26** of the **PEIR**. ACR-07 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26** of the **PEIR**. The assessment of effects on heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

3.9.11 **Water environment**

- 3.9.11.1 The area within ACR-07 includes ditches and an Ordinary Watercourse tributary of the River Adur which are already identified as environmental receptors in **Chapter 27: Water environment, Volume 2** of the **PEIR**.
- 3.9.11.2 The ACR-07 area also crosses floodplain associated with the River Adur (western branch) compared to the original PEIR Assessment Boundary. The TC-16 pit overlaps with a small part of the western edge of the floodplain. A range of existing embedded environmental measures will be employed to minimise the potential for displacement of flood water⁴¹.
- 3.9.11.3 Therefore, considering the implementation of embedded environmental measures²⁵, ACR-07 does not change the environmental receptors or the overall assessment outcomes and conclusions (see **Tables G-15** to **G-21** in **Appendix G**) presented in **Sections 27.9** to **27.11** within **Chapter 27** of the **PEIR**.

3.9.12 **Major accidents and disasters**

- 3.9.12.1 ACR-07 does not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6** to **28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

3.9.13 **Greenhouse gas assessment**

- 3.9.13.1 ACR-07 does not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4** of the **PEIR**.

⁴⁰ See **Appendix F**: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-117, C-133 and C-157.

⁴¹ See **Appendix F**: C-75, C-123, C-130, C-131, C-138, C-154 and C-182.

4. Modified Routes

4.1 Description of Modified Routes

- 4.1.1.1 As outlined in **Section 1.3**, 14 Modified Routes (MR) (MR-01 to MR-14) to the onshore part of the original PEIR Assessment Boundary have been included as a result of the ongoing design evolution process since publication of the PEIR in July 2021.
- 4.1.1.2 The MRs have arisen as a result of a combination of statutory consultation feedback received on the PEIR from local community members, statutory bodies and others. Feedback has also been considered from ongoing stakeholder and landowner engagement. The MRs have also considered the outcomes of further surveys and engineering design investigations undertaken since the PEIR was published, (e.g., geophysical surveys in areas of archaeological potential within the original PEIR Assessment Boundary). These inputs have been analysed and have contributed to the design change process.
- 4.1.1.3 The location of the 14 MRs is shown on **Figures 2 to 29** in **Appendix A** with each MR shown on its own individual page. The statutory and non-statutory environmental features relevant to each MR are presented in **Appendix B**, with two figures per MR to present the various environmental features.

Table 4-1 Description of Modified Routes

ID	Description
MR-01 (Figure 2, Appendix A)	Area added at the landfall at Climping, moving the boundary approximately 350m to the east. This area has been extended to provide for flexibility for the HDD compound location. This is in response to potential variability in ground conditions for engineering; and environmental considerations including flood risk and coastal erosion. With MR-01 extending the development boundary, there is flexibility for the landfall and associated HDD compound to be located either in the field north of the tree line that runs northwest from 'The Mill' or to the west of the tree line. As per the proposals outlined in the PEIR, the HDD to connect offshore will be made under the land to the south of the landfall. MR-01 will run beneath the Climping Beach Site of Special Scientific Interest (SSSI).
MR-02 (Figure 3, Appendix A)	Area added to the extend the western part of the original PEIR Assessment Boundary approximately 550m south-west of Littlehampton. This is to enable movement of the onshore cable corridor to the west, thereby reducing interaction with a local development plan housing zone.

ID	Description
MR-03 (Figure 9, Appendix A)	<p>Area added to onshore part of the original PEIR Assessment Boundary approximately 370m to the south-east of Crossbush. This is to avoid interaction of the proposed trenchless crossing (trenchless crossing at this location already proposed in PEIR and therefore not shown in Figures 1 to 31 Appendix A) with a consented proposed commercial building.</p>
MR-04 (Figure 12, Appendix A)	<p>Area added to extend original PEIR Assessment Boundary to allow for cable stringing out area in relation to TC-08.</p>
MR-05 Figure 14, Appendix A)	<p>Areas provided to extend original PEIR Assessment Boundary, extending the width of the proposed access areas. This is to facilitate field access for construction vehicles to feed cables through under hedgerows. The modification to construction technique will avoid disturbance to hedgerows and reduce impacts on a commercial business.</p>
MR-06 (Figure 18, Appendix A)	<p>Area added to the extend the southeast part of the original PEIR Assessment Boundary. This is located approximately 940m south-west of Washington and provides an additional area for onshore cable installation (open trench) with cable easement to run parallel to the boundary adjacent to the woodland. This avoids features including gallops and surface water flooding.</p>
MR-07 (Figure 19, Appendix A)	<p>Two areas added to extend the original PEIR Assessment Boundary to the south with the eastern area approximately 100m north-west of Washington and the western area approximately 550m north-west of Washington.</p> <p>Both MR-07 areas provide optionality for the direction of the trenchless crossing, including suitable working area for cable stringing out and offset from Ancient Woodland. The eastern section of the two areas provides flexibility for a suitable bend on the cable.</p>
MR-08 (Figure 20, Appendix A)	<p>Area added approximately 600m north-east of Washington to extend the original PEIR Assessment Boundary to the north. This is to minimise severance of agricultural fields.</p>
MR-09 (Figure 23, Appendix A)	<p>Area added to extend the original PEIR Assessment Boundary to the west, located approximately 150m east of Ashurst. This is to minimise the severance of agricultural fields.</p>

ID	Description
MR-10 (Figure 25, Appendix A)	Area added to extend the original PEIR Assessment Boundary to the east, located approximately 600m to the south-east of Partridge Green. This is to provide a topsoil storage compound outside of the nearby floodplain.
MR-11 (Figure 26, Appendix A)	Area added to extend the original PEIR Assessment Boundary to the east approximately 270m north of Shermanbury. This is to enable the onshore cable corridor to run parallel to the edge of the field boundaries, thereby minimising severance of agricultural fields.
MR-12 (Figure 27, Appendix A)	Area added to extend the original PEIR Assessment Boundary to the east, located approximately 1.4km south-east of Cowfold. This is to enable the onshore cable corridor to take a more direct route. MR-12 includes a trenchless crossing (TC-17) of a tributary of Cowfold Stream and hedgerows classed as Important under the Hedgerow Regulations.
MR-13 (Figure 28, Appendix A)	Area added to extend the original PEIR Assessment Boundary to the east approximately 1km south-east of Cowfold. This is to enable a trenchless crossing (TC-18) of hedgerows, mature trees and of Cowfold Stream. This will also move the corridor further east from residential properties.
MR-14 (Figure 29, Appendix A)	Area added to extend the original PEIR Assessment Boundary to the east approximately 1.4km south-east of Cowfold. This allows for the onshore cable installation to take place outside the root protection area of a veteran tree identified during arboricultural surveys.

4.2 Environmental review associated with Modified Routes

4.2.1 Introduction

- 4.2.1.1 Summary tables showing the environmental review for each of the MRs (MR-01 to MR-14) presented in **Table D1, Appendix D**. This summary table has been completed in line with the review criteria provided in **Table 1-1**.
- 4.2.1.2 Each onshore environmental aspect has reviewed each of the MRs. The findings for the full set of MRs are presented below as summaries by aspect. The summaries serve to highlight where an MR has been identified to interact with a receptor in a new or altered manner compared to what was identified in the PEIR (RED 2021). A conclusion is provided by each aspect as to whether the MRs impact the assessment outcomes and conclusions reported in the PEIR.

4.2.1.3 The environmental review for MRs has considered the implementation of existing PEIR and new/updated embedded environmental measures, which are noted in **Appendix F**. For the overall PEIR assessment outcomes and conclusions for each aspect, please see the PEIR summary of residual effects tables set out in **Appendix G**.

4.2.2 Summary of environmental review

Socio-economics

4.2.2.1 There are no additional receptors or change to existing socio-economic receptors presented in the PEIR as a result of MRs (MR-01 to MR-14). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR.

4.2.2.2 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR have also been considered for the assessment of socio-economics in the PEIR SIR. As noted in the PEIR these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):

- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this PEIR SIR (negligible for UK and Sussex study areas – **Not Significant**);
- the impact on tourism economy is considered at the Sussex study area and the changes set out in this PEIR SIR have no impact on the significance assessed at PEIR (**Not Significant**); and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this PEIR SIR and therefore the significance is consistent with what was assessed at PEIR (ranging from **Not Significant to Significant**).

Landscape and visual impact

4.2.2.3 MR-01 and MR-02 are closer to receptors at Mill Cottage and the golf course, and Climping Park respectively. However, considering the implementation of embedded environmental measures to minimise temporary disturbance to residential properties and recreational users⁴² (**Appendix F**), this does not change the level of effect, assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2** of the PEIR.

⁴² See **Appendix F: C-19, C-20, C-22 and C-33**.

- 4.2.2.4 MR-06 is closer to Ancient Woodland and an additional hedgerow will be crossed by the onshore cable corridor. MR-06 includes the implementation of embedded environmental measures including ensuring a root protection area of 25m of Ancient Woodland and measures to reduce the width of hedgerow removed, protect and reinstate hedgerows. Therefore, considering the implementation of embedded environmental measures (**Appendix F**⁴³), MR-06 does not change the level of effect, assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19** of the **PEIR**.
- 4.2.2.5 MR-08 is closer to receptors including Green Farm House and Green Farm Barn, and also two additional hedgerows will be crossed by the onshore cable corridor. There is extensive existing tree cover which, alongside the implementation of embedded environmental measures⁴⁴ (**Appendix F**), will help to mitigate the effects from construction activities. Therefore, considering existing tree cover and the implementation of embedded environmental measures (**Appendix F**), MR-08 does not change the levels of effect, assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19** of the **PEIR**.
- 4.2.2.6 MR-09 is closer to receptors in Ashurst, however visual effects are mitigated by existing tree cover and landform. Therefore, considering existing tree cover and landform, alongside the implementation of embedded environmental measures⁴⁵ (**Appendix F**), MR-09 does not change the levels of effect, assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19** of the **PEIR**.
- 4.2.2.7 MR-12 will include the crossing of up to five additional hedgerows. MR-12 includes the implementation of embedded environmental measures (**Appendix F**) including those to reduce width of hedgerow removal and to protect and reinstate hedgerows. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), MR-12 does not change the level of effect, assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19** of the **PEIR**.
- 4.2.2.8 The other MRs (MR-03, MR-4, MR-05, MR-07, MR-010, MR-11, MR-13 and MR-14) do not change the assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19** of the **PEIR**.

⁴³ See **Appendix F**: C-1, C-2, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-23, C-27, C-29, C-32, C-33, C-66, C-81, C-82, C-85, C-100, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-202, C-204, C-308, and C-317.

⁴⁴ See **Appendix F**: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-23, C-27, C-29, C-32, C-33, C-81, C-82, C-85, C-100, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, C-202, C-204, C-308, and C-317.

⁴⁵ See **Appendix F**: C-1, C-2, C-5, C-6, C-7, C-9, C-11, C-12, C-13, C-18, C-19, C-20, C-21, C-22, C-23, C-27, C-29, C-32, C-33, C-81, C-82, C-85, C-100, C-103, C-104, C-107, C-111, C-115, C-128, C-130, C-132, C-133, C-157, C-162, C-163, C-164, C-165, C-168, C-169, C-174, C-183, C-193, C-196, C-199, and C-202.

Air quality

- 4.2.2.9 There are no additional receptors or change to existing air quality receptors presented in the PEIR as a result of MRs (MR-01 to MR-14). The MRs (MR-01 to MR-14) will therefore not change the outcome of the construction dust assessment (**Section 20.9**) or the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2 of the PEIR**.

Soils and agriculture

- 4.2.2.10 There are no additional receptors or change to existing soils and agriculture receptors presented in the PEIR as a result of MRs (MR-01 to MR-14). The total area of land where effects on soil and agricultural land receptors could occur was calculated as 206.95ha. The additional land in MR-01 to MR-14 will increase this total by 43.01ha. This equates to a 20.8% increase in the area of ground potentially subject to temporary disturbance during construction and trenchless crossings (TC-12 and TC-19 to TC-21). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions (see **Table G-9 in Appendix G**) presented in **Sections 21.9 to 21.15** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR**.

Noise and vibration (onshore)

- 4.2.2.11 There are no additional receptors or change to existing noise and vibration receptors presented in the PEIR as a result of MRs (MR-01 to MR-14) and associated trenchless crossings. The additional areas for onshore cable trenching do not change the overall noise and vibration assessment outcomes and conclusions of the onshore cable installation (trenched) assessment (see **Table G-10 in Appendix G**) provided in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2 of the PEIR**.

Terrestrial ecology and nature conservation

- 4.2.2.12 MR-01 includes an additional overlap of Climping Beach Site of Special Scientific Interest (SSSI) and a belt of woodland running from Mill Cottage in a north-westerly direction. MR-01 includes the implementation of embedded environmental measures including avoidance of the SSSI and/or woodland through the use of trenchless crossing (HDD) at landfall; this confines ground works to areas within existing arable fields. This will ensure that the habitats present, and the species supported, will remain unaffected. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), MR-01 does not change the assessment outcomes and conclusions (see **Table G-11 in Appendix G**) presented in **Sections 23.10 to 23.14** within **Chapter 23: Terrestrial ecology and nature conservation, Volume 2 of the PEIR**.
- 4.2.2.13 MR-06 is adjacent to a stand of Ancient Woodland and Sullington Hill Local Wildlife Site (LWS). MR-06 includes the implementation of embedded environmental measures including ensuring a root protection area of 25m of Ancient Woodland and up to 15m of the woodland within the LWS. Therefore,

considering the implementation of embedded environmental measures (**Appendix F**), MR-06 does not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23** of the PEIR.

- 4.2.2.14 MR-08 includes an additional single field tree. The loss of this tree does not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23** of the PEIR.
- 4.2.2.15 MR-09 is adjacent to mature trees on the boundary. MR-09 includes the implementation of embedded environmental measures (**Appendix F**) including ensuring a root protection area of up to 15m of the mature trees. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), MR-09 does not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23** of the PEIR.
- 4.2.2.16 MR-12 and MR-13 include additional ponds and these are to be retained. Therefore, MR-12 and MR-13 do not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23** of the PEIR.
- 4.2.2.17 The other MRs (MR-02, MR-03, MR-04, MR-05, MR-07, MR-010, MR-11 and MR-014) do not change the assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10** to **23.14** within **Chapter 23** of the PEIR.

Transport

- 4.2.2.18 There are no additional receptors or change to existing transport receptors presented in the PEIR as a result of MRs (MR-01 to MR-14).
- 4.2.2.19 The MRs will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the PEIR.
- 4.2.2.20 Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the overall assessment outcomes and conclusions (see **Table G-12** in **Appendix G**) presented in **Sections 24.9** to **24.15** within **Chapter 24: Transport, Volume 2** of the PEIR.

Ground conditions

- 4.2.2.21 MR-02 is adjacent to (but not within) an area of historical landfilling indicated to contain inert waste (J L Baird Climping landfill). MR-02 includes the implementation of a range of embedded environmental measures (**Appendix F**) including appropriate Personal Protective Equipment (PPE), appropriate working practices and risk assessment for contamination. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), ensure that there is no change to the overall assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) presented in **Sections 25.9** to **25.15** within **Chapter 25: Ground conditions, Volume 2** of the PEIR.

- 4.2.2.22 MR-13 includes three small historical ground workings listed as Brit Pit entries which were previously up to approximately 50m from the onshore part of the original PEIR Assessment Boundary. MR-13 includes the implementation of a range of embedded environmental measures (including C-14, C-15, C-72 and C-116 in **Appendix F**), including design being completed in line with design standards to minimise risk of structural or geotechnical instability. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), MR-12 does not change the overall assessment outcomes and conclusions (see **Table G-13 in Appendix G**) presented in **Sections 25.9 to 25.15** within **Chapter 25** of the PEIR.
- 4.2.2.23 The other MRs (MR-01, MR-03 to MR-12 and MR-014) do not change the overall assessment outcomes and conclusions (see **Table G-13 in Appendix G**) presented in **Sections 25.9 to 25.15** within **Chapter 25** of the PEIR.

Historic environment

- 4.2.2.24 MR-08 is 60m from a grade II listed building (Green Farmhouse) previously assessed in **Table 26-26** within **Chapter 26: Historic environment, Volume 2 of the PEIR**. However, considering intervening screening and the A283, along with the implementation of embedded environmental measures (**Appendix F**), MR-08 does not change the overall assessment outcomes or conclusions (see **Table G-14 in Appendix G**) presented in **Table 26-26** and **Sections 26.9 to 26.15** within **Chapter 26** of the PEIR.
- 4.2.2.25 MR-09 is 125m from a grade II listed building (Bloques Farmhouse – 1191892) and 150m from a grade II listed building (The Fountain Inn – 1027457). However, considering intervening planting and buildings, along with the implementation of embedded environmental measures (**Appendix F**), MR-09 does not change the overall assessment outcomes or conclusions (See **Table G-14 in Appendix G**) presented in **Sections 26.9 to 26.15** within **Chapter 26** of the PEIR.
- 4.2.2.26 The other modified routes (MR-01 to MR-06 and MR-010 to MR-014). do not change the overall assessment outcomes and conclusions (see **Table G-14 in Appendix G**) presented in **Sections 26.9 to 26.15** within **Chapter 26** of the PEIR.

Water environment

- 4.2.2.27 Whilst MR-04 is located within a SPZ1, the area provides no additional risk from cable stringing out proposals given that no ground breaking is proposed within SPZ1 and that no hazardous materials being proposed at this location, in line with existing PEIR commitments (**Appendix F**). Therefore, MR-04 does not change the overall assessment outcomes or conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27: Water environment, Volume 2** of the PEIR.
- 4.2.2.28 MR-12 overlaps with an area of Flood Zone 2 and a small area of Flood Zone 3 and MR-13 overlaps with an area of Flood Zone 2. The trenchless crossing entry and exit pits associated with TC-17 (MR-12) and TC-18 (MR-13) will be sited outside of Flood Zones 2 and 3. As part of the implementation of embedded environmental measures (**Appendix F**), the onshore temporary construction corridor comprising the onshore cable trench, temporary construction access road

and any soil stockpiles will also be sited outside of Flood Zone 2 and 3 associated with the Cowfold Stream. Therefore, MR-12 and MR-13 do not change the overall assessment outcomes or conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the PEIR.

- 4.2.2.29 The other MRs (MR-01 to MR-03, MR-05 to MR-11 and MR-14) do not change the overall assessment outcomes and conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the PEIR.

Major accidents and disasters

- 4.2.2.30 There are no new receptors or change to existing major accidents and disasters receptors presented in the PEIR as a result of MRs (MR-01 to MR-14). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the PEIR.

Greenhouse gas assessment

- 4.2.2.31 There are no new receptors or change to existing greenhouse gas assessment receptors presented in the PEIR as a result of MRs (MR-01 to MR-14). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Appendix 5.2: Greenhouse gas assessment, Volume 2** of the PEIR.

4.3 Conclusion

- 4.3.1.1 The MRs have been reviewed across the onshore environmental aspects and a number of new or revised environmental receptors have been identified in **Table D1, Appendix D**, and outlined in **Section 4.2** above. Although new or revised environmental receptors have been identified, the MRs do not change the overall assessment outcomes and conclusions (see **Appendix G**) outlined across the **Chapters 18-28, Volume 2** of the PEIR.
- 4.3.1.2 A full assessment of the ES Assessment Boundary in support of the DCO Application will be presented in the ES.

5. Trenchless Crossings

5.1 Description of Trenchless Crossings

- 5.1.1.1 As outlined in **Section 1.3**, 33 revised and/or additional trenchless crossings (TCs) (TC-01 to TC-33) have been included as a result of the ongoing design evolution process since publication of the **PEIR** in July 2021.
- 5.1.1.2 These are described in **Table 5-1** and the location of the TCs is shown on **Figures 6 to 48 in Appendix A** with each shown on its own individual page alongside relevant LACRs, ACRs and MRs with the exception of TC-12, TC-19, TC-20 and TC-21 which are shown on their own separate page. The statutory and non-statutory environmental features relevant to each TC are presented in **Appendix B**, with two figures per TC to present the various environmental features.
- 5.1.1.3 The TCs described have arisen as a result of a combination of statutory consultation feedback received on the PEIR from local community members, statutory bodies and others. Feedback has also been considered from ongoing stakeholder and landowner engagement. The TCs have also considered the outcomes of further surveys and engineering design investigations undertaken since the PEIR was published, (e.g., geophysical surveys in areas of archaeological potential within the original PEIR Assessment Boundary). These inputs have been analysed and have contributed to the design change process.
- 5.1.1.4 Where revised and/or additional TCs are associated with an LACR, ACR or MR, the environmental review is included as part of the relevant ACR (**Section 3** and **Table C-2, Appendix C**) or MR (**Section 4** and **Table D-1, Appendix D**) with descriptions to this provided in **Table 5-1** below.
- 5.1.1.5 Where trenchless crossings are not associated with an LACR, ACR or MR the environmental review is provided in **Section 5.2**.

Table 5-1 Description of Trenchless Crossings

ID	Description
TC-01 and TC-02 included in ACR-01 (Figure 6, Appendix A)	Additional trenchless crossings of the Chichester to Worthing railway line and of Black Ditch (TC-01) and a second additional trenchless crossing of the Chichester to Worthing railway line (TC-02). Environmental reviews of TC-01 and TC-02 are included as part of ACR-01 (Section 3.3) and further description of ACR-01 is provided in Table 3-1 .
TC-03, TC-04 and TC-05	Additional trenchless crossings of the A284 (TC-03) and the proposed Lyminster Bypass (TC-04), which is a separate project expected to be complete prior to the construction of Rampion 2. Trenchless crossing also required of the A27 (TC-05). Environmental reviews of TC-03,

ID	Description
<p>included in ACR-02 (Figure 8, Appendix A)</p>	<p>TC-04 and TC-05 are included as part of LACR-01 and LACR-02 (Section 2) and ACR-02 (Section 3.4). Further description of LACR-01 and LACR-02 is provided in Table 2-1 and ACR-02 is provided in Table 3-1.</p>
<p>TC-06 and TC-07 included in ACR-03 (Figure 10, Appendix A)</p>	<p>Additional trenchless crossings of Crossbush Lane (including approximately 150m of Ancient Woodland) (TC-06) and Clay Lane (TC-07). Environmental review of TC-06 and TC-07 are included as part of ACR-03 (Section 3.5) and further description of ACR-03 is provided in Table 3-1.</p>
<p>TC-08, TC-09 and TC-10 included in ACR-04 (Figure 13, Appendix A)</p>	<p>Additional trenchless crossings of the Warningcamp to New Down Local Wildlife Site (TC-08 and TC-09) and Ancient Woodland (TC-10). Environmental reviews of TC-08, TC-09 and TC-10 are included as part of ACR-04 (Section 3.6) and further description of ACR-04 is provided in Table 3-1.</p>
<p>TC-11 included in ACR-05 (Figure 15, Appendix A)</p>	<p>Trenchless crossing required of a (separate) shelter belt that provides habitat connectivity between woodland blocks to the south and north through the largely arable landscape. Environmental review of TC-11 is associated with ACR-05 (Section 3.7) and further description of ACR-05 is provided in Table 3-1.</p>
<p>TC-12 (Figure 21, Appendix A)</p>	<p>Additional trenchless crossing of Water Lane and a tributary of Honeybridge Stream (TC-12). Environmental review of TC-12 is provided in Table D2 in Appendix D.</p>
<p>TC-13 and TC-14 included in ACR-06 (Figure 22, Appendix A)</p>	<p>Additional trenchless crossings of Spithandle Lane and Calcot Wood (TC-13), and of the B2135 and River Arun tributary (TC-14). Environmental reviews of TC-13 and TC-14 are included as part of ACR-06 (Section 3.8) and further description of ACR-06 is provided in Table 3-1.</p>
<p>TC-15 and TC-16 included in ACR-07 (Figure 24, Appendix A)</p>	<p>Additional trenchless crossings of the Adur River (TC-16) and a farm access track and mature treeline (TC-15). Environmental reviews of TC-15 and TC-16 are included as part of ACR-07 (Section 3.9) and further description of ACR-07 is provided in Table 3-1.</p>

ID	Description
TC-17 included in MR-12 (Figure 27, Appendix A)	Trenchless crossing of the of the tributary of the Cowfold Stream and hedgerows classed as Important under the Hedgerow Regulations (TC-17). Environmental review of TC-17 is included as part of MR-12 (Appendix D) and further description of MR-12 is provided in Table 4-1 .
TC-18 included in MR-13 (Figure 28, Appendix A)	Trenchless crossing of hedgerows, mature trees and the Cowfold Stream (TC-18). Environmental review of TC-18 is associated with MR-13 (Appendix D) and further description of MR-13 is provided in Table 4-1 .
TC-19 and TC-20 (Figure 31, Appendix A)	Additional trenchless crossing of a tributary of Cowfold Stream (TC-19) for the entry to Bolney Road/Kent Street onshore substation search area cable. A second trenchless crossing of Kent Street and associated ditch (TC-20) for the exit of Bolney Road/Kent Street onshore substation search area cable. Environmental review of TC-19 and TC-20 are provided in Table D2 in Appendix D .
TC-21 (Figure 31, Appendix A)	Additional trenchless crossing of Wineham Lane (TC-21) within the onshore part of the original PEIR Assessment Boundary. Environmental review of TC-21 is provided in Table D2 in Appendix D .
TC-22 (Figure 35, Appendix A)	Additional trenchless crossing of an unnamed ditch and tree line (TC-22). Environmental reviews of TC-22 are included as part of LACR-01a (Section 2.3) and further description of LACR-01a is provided in Table 2-1 .
TC-23 (Figure 36, Appendix A)	Additional trenchless crossing of Decoy Lane and mature tree line (TC-23). Environmental review of TC-23 is included as part of LACR-01a (Section 2.3) and further description of LACR-01a is provided in Table 2-1 .
TC-24 (Figure 36, Appendix A)	Additional trenchless crossing of A27 Arundel Road (TC-24). Environmental review of TC-24 is included as part of LACR-01a (Section 2.3) and further description of LACR-01a is provided in Table 2-1 .
TC-25 (Figure 36, Appendix A)	Additional trenchless crossing of a public right of way and mature woodland that runs south from Hammerpot Copse (TC-25). Environmental review of TC-25 is included as part of LACR-01a (Section 2.3) and further description of LACR-01a is provided in Table 2-1 .

ID	Description
TC-26 (Figure 36, Appendix A)	Additional trenchless crossing of the steep terrain down to Michelgrove and the associated woodland at Michelgrove Park (TC-26). Environmental review of TC-26 is included as part of LACR-01a (Section 2.3) and further description of LACR-01a is provided in Table 2-1 .
TC-27 (Figure 42, Appendix A)	Additional trenchless crossing to proceed east up the steep terrain of Black Patch Hill (TC-27). Environmental review of TC-27 is included as part of LACR-01c (Section 3) and further description of LACR-01c is provided in Table 2-1 .
TC-28 (Figure 42, Appendix A)	Additional trenchless crossing of steep terrain east down Black Patch Hill (TC-28). Environmental review of TC-28 is included as part of LACR-01c (Section 3) and further description of LACR-01c is provided in Table 2-1 .
TC-29 (Figure 43, Appendix A)	Additional trenchless crossing of steep terrain from Sullington Hill to re-join the PEIR Assessment Boundary (TC-29). Environmental review of TC-29 is included as part of LACR-01c (Section 3) and further description of LACR-01c is provided in Table 2-1 .
TC-30 (Figure 45, Appendix A)	Additional trenchless crossing of approximately 100m will be used to pass under mature trees that are connected to the ancient woodland further south (TC-30). Environmental review of TC-30 is included as part of LACR-02 (Section 2.4) and further description of LACR-02 is provided in Table 2-1 .
TC-31 (Figure 45, Appendix A)	Additional trenchless crossing of approximately 125m trenchless crossing of ancient Woodland to the west of Blakehurst Lane (TC-31). Environmental review of TC-31 is included as part of LACR-02 (Section 2.4) and further description of LACR-02 is provided in Table 2-1 .
TC-32 (Figure 46, Appendix A)	Additional trenchless crossing of approximately 200m is used to traverse under ancient woodland situated south west of Upper Barpham (TC-32). Environmental review of TC-32 is included as part of LACR-02 (Section 2.4) and further description of LACR-02 is provided in Table 2-1 .
TC-33 (Figure 48, Appendix A)	Additional trenchless crossing north west of Michelgrove Park of approximately 250m to traverse the steep section and woodland connected to ancient woodland (TC-33). Environmental review of TC-33 is included as part of LACR-02 (Section 2.4) and further description of LACR-02 is provided in Table 2-1 .

5.2 Environmental review associated with Trenchless Crossings

5.2.1 Introduction

- 5.2.1.1 A summary table showing the environmental review for each of the TCs (TC-12 and TC-19 to TC-21) is provided in **Table D2, Appendix D**. The summary table has been completed in line with the review criteria provided in **Table 1-1**.
- 5.2.1.2 Each onshore environmental aspect has reviewed each of the TCs. The findings for the full set of TCs are presented below as summaries by aspect. The summaries serve to highlight where an TC has been identified to interact with a receptor in a new or altered manner compared to what was identified in the **PEIR (RED 2021)**. A conclusion is provided by each aspect as to whether the TCs impact the assessment outcomes and conclusions reported in the **PEIR**.
- 5.2.1.3 The TCs reported below are those which have not already been assessed as part of the ACRs (**Section 3**) or MRs (**Section 4**).
- 5.2.1.4 The environmental review for TCs has considered the implementation of existing PEIR and new/updated embedded environmental measures, which are noted in **Appendix F**. For the overall PEIR assessment outcomes and conclusions for each aspect, please see the PEIR summary of residual effects tables set out in **Appendix G**.

5.2.2 Summary of environmental review

Socio-economics

- 5.2.2.1 There are no additional receptors or change to existing socio-economic receptors presented in the PEIR as a result of TCs (TC-12 and TC-19 to TC-21). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions (see **Table G-1 in Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR**.
- 5.2.2.2 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):
- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);

- the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
- the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

Landscape and visual impact

- 5.2.2.3 The TCs (TC-12 and TC-19 to TC-21) allow the preservation of existing vegetation including mature trees, woodland and hedgerows which will have been impacted by open cut trenching at these locations. Considering the implementation of embedded environmental measures (**Appendix F**), the TCs will not change the overall outcomes and assessments (see **Tables G-2 – G-8 in Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**.

Air quality

- 5.2.2.4 There are four trenchless crossings and associated compounds that introduce additional air quality receptors at TC-12, TC-19, TC-20 and TC-21. Whilst the introduction of trenchless crossings and associated compounds as part of TC-12, TC-19, TC-20 and TC-21 may result in additional receptors to be considered in the construction plant modelling in **Appendix 20.2: Full results of construction plant modelling, Volume 4** of the PEIR, this does not change the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**) provided in **Sections 20.9 to 20.15** within **Chapter 20 of the PEIR**.

Soils and agriculture

- 5.2.2.5 There are no additional receptors or change to existing soils and agriculture receptors presented in the PEIR as a result of TCs (TC-12 and TC-19 to TC-21). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions (see **Table G-9 in Appendix G**) presented in **Sections 21.9 to 20.15** within **Chapter 21: Soils and agriculture, Volume 2 of the PEIR**.

Noise and vibration (onshore)

- 5.2.2.6 There are four trenchless crossings and associated compounds that introduce additional noise sensitive receptors at TC-12 (e.g., All Saints Church on Water Lane), TC-19 (e.g., Taintfield Farm and Westridge Farm), TC-20 (e.g., Southlands Farm) and TC-21 (e.g. Westridge Place and Oakfield Farm). Considering the implementation of embedded environmental measures (**Appendix F**), the trenchless crossings do not change the overall assessment outcomes and conclusions of the trenchless crossings noise assessment (see **Table G-10 in Appendix G**) presented in **Section 22.9** within **Chapter 22 of the PEIR**. The

trenchless crossings assessment will be updated in line with the ES Assessment Boundary and presented in the ES.

Terrestrial ecology and nature conservation

- 5.2.2.7 TC-12 reduces the level of effect on a chalk stream and area of Ancient Woodland by ensuring that they remain intact and functional throughout the construction phase. TC-12 does not change the assessment outcomes and conclusions (see **Table G-11 in Appendix G**) presented in **Sections 23.10 to 22.14** within **Chapter 23** of the **PEIR**.
- 5.2.2.8 Trenchless crossings TC-19, TC-20 and TC-21 ensure that native hedgerows, trees and treelines are maintained intact and functional throughout the construction phase. These trenchless crossings do not change the assessment outcomes and conclusions (see **Table G-11 in Appendix G**) presented in **Sections 23.10 to 22.14** within **Chapter 23** of the **PEIR**.

Transport

- 5.2.2.9 There are three trenchless crossings that cross roads including TC-12 (Water Lane), TC-20 (Kent Street) and TC-21 (Wineham Lane) and these will be reflected in the **outline CTMP** provided alongside the DCO Application.
- 5.2.2.10 TC-12, TC-20 and TC-21 will also not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24** of the **PEIR**.
- 5.2.2.11 There are no additional receptors or change to existing transport receptors presented in the PEIR as a result of TCs (TC-12 and TC-19 to TC-21). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) presented in **Sections 24.9 to 24.15** within **Chapter 24: Transport, Volume 2** of the **PEIR**.

Ground conditions

- 5.2.2.12 Trenchless crossings (TC-12 and TC-19 to TC-21) do not change the overall assessment outcomes and conclusions (see **Table G-13 in Appendix G**) presented in **Sections 25.9 to 25.15** within **Chapter 25** of the **PEIR**.

Historic environment

- 5.2.2.13 Trenchless crossings (TC-12 and TC-19 to TC-21) do not change the overall assessment outcomes and conclusions (see **Table G-14 in Appendix G**) presented in **Sections 26.9 to 26.15** within **Chapter 26** of the **PEIR**.

Water environment

- 5.2.2.14 Trenchless crossings TC-19 and TC-21 overlap with part of the floodplain associated with an Ordinary watercourse. However, this does not change the overall assessment outcomes and conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the **PEIR**.

- 5.2.2.15 The other TCs (TC-12 and TC-20) do not change the overall assessment outcomes and conclusions (see **Tables G-15 to G-21 in Appendix G**) presented in **Sections 27.9 to 27.11** within **Chapter 27** of the **PEIR**.

Major accidents and disasters

- 5.2.2.16 There are no new receptors or change to existing major accidents and disasters receptors presented in the PEIR as a result of trenchless crossings (TC-12 and TC-19 to TC-21). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2** of the **PEIR**.

Greenhouse gas assessment

- 5.2.2.17 There are no new receptors or change to existing greenhouse gas assessment receptors presented in the PEIR as a result of trenchless crossings (TC-12 and TC-19 to TC-21). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Appendix 5.2: Greenhouse gas assessment, Volume 2** of the **PEIR**.

5.3 Conclusion

- 5.3.1.1 The TCs not associated with an LACR, ACR or MR (TC-12 and TC-19 to TC-21) have been reviewed across the onshore environmental aspects and a number of new or revised environmental receptors have been identified in **Table D2, Appendix D**, and outlined in **Section 5.2** above. Although new or revised environmental receptors have been identified, the TCs do not change the overall assessment outcomes and conclusions (see **Appendix G**) outlined across **Chapters 18-28, Volume 2** of the **PEIR**.
- 5.3.1.2 A full assessment of the ES Assessment Boundary in support of the DCO Application will be presented in the ES.

6. Alternative temporary construction and permanent accesses

6.1 Description of alternative temporary construction and permanent accesses

- 6.1.1.1 As outlined in **Section 1.3**, 32 alternative temporary construction and permanent accesses (AAs) (AA-01 to AA-32) have been included as a result of the ongoing design evolution activities since publication of the PEIR in July 2021. These are described in **Table 6-1** and their location is shown on **Figures 4 to 48** in **Appendix A**, with each shown on its own individual page either per AA or alongside relevant LACRs, ACRs and MRs.
- 6.1.1.2 The statutory and non-statutory environmental features relevant to each AA are presented in **Appendix B**, with two figures per AA to present the various environmental features.
- 6.1.1.3 The AAs have arisen as a result of a combination of statutory consultation feedback received on the PEIR from local community members, statutory bodies and others. Feedback has also been considered from ongoing stakeholder and landowner engagement. The AAs have also considered the outcomes of further surveys and engineering design investigations undertaken since the PEIR was published, (e.g. geophysical surveys in areas of archaeological potential within the original PEIR Assessment Boundary). These inputs have been analysed and have contributed to the design change process.
- 6.1.1.4 Temporary construction accesses are required along the onshore cable corridor to allow for the transportation of materials, plant, equipment and personnel to and from the construction sites. Permanent operational accesses are required for future periodic inspection, test and fault investigation (if required) of the onshore cable system, likely to be required every two to five years, and maintenance and repair work. This will require access to the link box inspection chambers installed at ground level at defined inspection points along the onshore cable route. This will involve attendance by up to three light vehicles, such as vans, in a day at any one location where possible.

Table 6-1 Description of alternative temporary construction and permanent accesses

ID	Description
AA-01 (Figure 4, Appendix A)	Alternative temporary construction and permanent access approximately 380m south-east of Climping. AA-01 enables direct movement between the temporary construction compound and soil storage area, and the onshore cable corridor. The access will be provided via a new temporary

ID	Description
AA-02	stone road using an existing access from Church Lane. The area includes 90m of temporary construction visibility splays at Church Lane.
(Figure 5, Appendix A)	Alternative permanent access from the A259 running through Littlehampton. The access runs through a recently built out residential area to the west of Littlehampton and will utilise existing roads and infrastructure with no upgrades required. AA-02 runs 800m north on Benjamin Grey Drive and Tatlow Chase up to a farm access track identified in the original PEIR Assessment Boundary.
AA-03	Alternative temporary construction and permanent access required approximately 600m west of Lyminster in association with ACR-01. AA-03 provides both temporary construction and permanent access from the original PEIR Assessment Boundary to the east of the railway to facilitate ACR-01.
(Figure 6, Appendix A)	During the construction phase, AA-03 utilises the existing track adjacent to Church Lane and continues west for 150m via the use of a private at-grade crossing of the railway line. Then it continues south-west parallel to the railway line for approximately 500m to join ACR-01 via a new temporary bell mouth entrance and a new temporary stone road.
	AA-03 is included in the assessment in ACR-01 in Section 3.3 .
AA-04	Alternative temporary construction access from A284 into fields to the north of Brookside Caravan Park approximately 40m south of properties at Lyminster. The access will run for approximately 850m to the original PEIR Assessment Boundary and will be provided via a new temporary stone road with a new temporary bell mouth entrance at Lyminster Road.
(Figure 7, Appendix A)	AA-04 overlaps with and is located within the footprint of ACR-02, however AA-04 will only be taken forward as a standalone access if ACR-02 is not progressed.
	AA-04 provides an alternative temporary construction access further north from the neighbouring residential caravan park.
AA-05	Alternative temporary construction and permanent access from the A284 Lyminster Road approximately 100m east of Lyminster. This access runs approximately 300m from the A284 to join with ACR-02 via an existing track and bell mouth entrance at the A284. AA-05 is required in association with ACR-02 and is included in the assessment of ACR-02 in Section 3.4 .
(Figure 8, Appendix A)	

ID	Description
AA-06 (Figure 8, Appendix A)	<p>Alternative permanent access approximately 620m south-east of Crossbush which runs on an existing track for approximately 375m from Calceto Lane. The section marked AA-06 is approximately 160m in length. AA-06 is required in association with ACR-02. AA-06 is included in the assessment in ACR-02 in Section 3.4.</p>
AA-07 (Figure 11, Appendix A)	<p>Alternative temporary construction access located at Warningcamp running approximately 560m west from Burpham Road through an agricultural field. The access will be provided via a new temporary stone road with a new temporary bell mouth entrance at Burpham Road.</p> <p>AA-07 provides an alternative temporary construction access to minimise interaction with an Environmental Stewardship Scheme and to run further to the north-east from neighbouring residential properties.</p>
AA-08 (Figure 13, Appendix A)	<p>Alternative temporary construction and permanent access to the base of the valley approximately 400m north-east of Warningcamp. This runs approximately 580m from Burpham Road and via a new temporary stone road with a new temporary bell mouth entrance at Burpham Road. This access is required in association with ACR-04 and trenchless crossings (TC-08 and TC-09), which are described in Section 3.6 of this PEIR SIR. The environmental review of AA-08 is provided in Section 6.2.</p>
AA-09 (Figure 16, Appendix A)	<p>Alternative temporary construction and permanent access which is approximately 5.3km in length. AA-09 runs from the A280 in the south (north of Clapham) to the original PEIR Assessment Boundary towards Sullington Hill. The access runs via existing estate roads and tracks with no bell mouth entrance associated with this access. AA-09 includes provisions for new passing places.</p> <p>AA-09 provides an alternative temporary construction and permanent access in response to further engineering considerations.</p>
AA-10 (Figure 17, Appendix A)	<p>Alternative temporary construction and permanent access which is approximately 3.6km in length. AA-10 runs from the existing bell mouth access from the A280 in the south (west of Findon) to the original PEIR Assessment Boundary towards Sullington Hill. From the A280, the first 1,200m of AA-10 will run alongside a restricted byway (2092) on a new temporary stone road, the access then runs along 1,100m of existing farm track and continues along 1,300m on a new temporary stone road to meet the original PEIR Assessment Boundary at Sullington Hill.</p> <p>AA-10 provides an alternative temporary construction and permanent access in response to further engineering considerations.</p>

ID	Description
AA-11 (Figure 18, Appendix A)	<p>Alternative temporary construction access runs from the A283 opposite Hampers Lane approximately 1.2km south-east of Storrington using a newly created bell mouth entry and track. AA-11 then proceeds south for approximately 750m to the original PEIR Assessment Boundary. The access will be provided via a new temporary stone road.</p> <p>AA-11 provides an alternative temporary construction access in response to further engineering considerations.</p>
AA-12 (Figure 18, Appendix A)	<p>Alternative temporary construction access runs from the A283 approximately 600m north-west of Washington using a newly created bell mouth entry and track. AA-12 runs for approximately 350m south of the A283 and parallel to the eastern edge of the field to the original PEIR Assessment Boundary. The access will be provided via a new temporary stone road.</p> <p>AA-12 provides an alternative temporary construction access in response to further engineering considerations.</p>
AA-13 (Figure 19, Appendix A)	<p>Alternative permanent access located on the west side of the A24, this is reached by a bridge from The Street on the east side of the A24 on the edge of Washington. No upgrades are required. AA-13 then connects to the access track identified in the original PEIR Assessment Boundary that runs north for approximately 250m.</p>
AA-14 (Figure 21, Appendix A)	<p>Alternative temporary construction and permanent access runs from an existing access off the A283 approximately 800m south-east of Wiston to the original PEIR Assessment Boundary east of a high-pressure gas main. Both the temporary construction and permanent accesses run north along an existing track from A283. The permanent access continues to follow the track to the north-northwest for approximately 200m, whilst the temporary construction access heads north across agricultural fields (approximately 180m) using a new temporary stone road.</p> <p>AA-14 provides an alternative temporary construction and permanent access in response to further engineering considerations.</p>
AA-15 (Figure 30, Appendix A)	<p>Alternative permanent access runs broadly west from Wineham Lane for approximately 500m to the original PEIR Assessment Boundary. The access is located approximately 1km south of the A272 via existing tracks and utilises an existing access at Wineham Lane.</p> <p>AA-15 provides an alternative permanent access that minimises disturbance to gallops.</p>

ID	Description
AA-16 (Figure 35, Appendix A)	<p>Alternative temporary construction access to those proposed from the new Lyminster Bypass, this exits the A27 into The Vinery trading estate. The access then turns south through the industrial estate, exiting on the south side onto LACR-01 and LACR-02. AA-16 is approximately 400m in length.</p> <p>AA-16 is included in the assessment of LACR-01a in Section 2.3 and 2.4.</p>
AA-17 (Figure 35, Appendix A)	<p>Alternative permanent access exits the A27 onto Lillian Terrace and then makes use of an existing field access between two rows of terraced houses, following a footpath joining the onshore cable corridor of LACR-01 and LACR-02. AA-17 is approximately 300m in length.</p> <p>AA-17 is included in the assessment of LACR-01a in Section 2.3 and 2.4.</p>
AA-18 (Figure 36, Appendix A)	<p>Alternative temporary construction and permanent access serves a short (approximately 700m) section of the onshore cable corridor. Access is direct from the A27 onto Decoy Lane and runs south for approximately 100m before exiting the lane onto the onshore cable corridor of LACR-01 and LACR-02.</p> <p>AA-18 is included in the assessment of LACR-01a in Section 2.3 and 2.4.</p>
AA-19 (Figure 36, Appendix A)	<p>Alternative permanent access uses an existing path to gain access to the onshore cable corridor of LACR-01 and LACR-02 from Hammerpot. AA-19 is approximately 150m in length.</p> <p>AA-19 is included in the assessment of LACR-01a in Section 2.3 and 2.4.</p>
AA-20 (Figure 36, Appendix A)	<p>Alternative permanent access runs from the end of the adopted highway on Swillage Lane for a further 200m north. At this point, access to the onshore cable corridor of LACR-01 and LACR-02 is then gained via a route along the edge of the fields to the west of the lane, running to the west of Norfolk House.</p> <p>AA-20 is included in the assessment of LACR-01a in Section 2.3 and 2.4.</p>
AA-21 (Figure 37, Appendix A)	<p>Alternative temporary construction and permanent access runs up to 900m (depending on cable routing) west from Michelgrove. The alternative temporary construction access will require a new temporary stone road running for the first 300m to avoid Michelgrove Cottages. After this point, the access may utilise the existing or follow a new</p>

ID	Description
	<p>temporary stone road running parallel. Permanent access will be gained over the same route once reinstated to its original condition.</p> <p>AA-21 is included in the assessment of LACR-01a and LACR-02 in Section 2.3 and 2.4.</p>
<p>AA-22 (Figure 39, Appendix A)</p>	<p>Alternative temporary construction and permanent access follows the existing estate track from the end of Michelgrove Lane for a distance of 1.7km to LACR-01. Provision within the red line has been made within AA-22 for new temporary passing places if required.</p> <p>AA-22 is included in the assessment of LACR-01b in Section 2.3.</p>
<p>AA-23 (Figure 39, Appendix A)</p>	<p>Alternative temporary construction and permanent access follows the existing estate track from the end of Michelgrove Lane for a distance of 200m to LACR-02. Provision within the red line has been made within AA-23 for new temporary passing places if required.</p> <p>AA-23 is included in the assessment of LACR-01c in Section 3.</p>
<p>AA-24 (Figure 41, Appendix A)</p>	<p>Alternative temporary construction and permanent access runs north from the end of the adopted highway along Longfurlong Lane for a further 850m.</p> <p>During the construction phase, a strip of land has been identified on the western side of the first 450m of AA-24 that may be suitable for a new temporary construction haul road should the existing track up to Longfurlong Farm be unsuitable. After passing the Longfurlong Farm, an additional strip of land has also been included in AA-24 on the eastern side of the existing track for a new temporary stone road should the original not be suitable.</p> <p>Permanent access is proposed along the existing track within AA-24.</p> <p>AA-24 is included in the assessment of LACR-01c in Section 3.</p>
<p>AA-25 (Figure 42, Appendix A)</p>	<p>Alternative temporary construction and permanent access is provided via an existing access point off Long Furlong to LACR-02 over a distance of approximately 850m.</p> <p>Alternative temporary construction access will follow the route of the current access to Tolmar Farm and use either the existing track if suitable or install a new temporary stone road in the adjacent field. After passing the farm, the route will be along a new temporary stone road along field boundaries up to the construction strip. Any area of temporary stone road would be removed and reinstated to previous use on completion of construction.</p>

ID	Description
	<p>Permanent access will aim to follow the existing track to Tolmar Farm and then proceed along field boundaries up to the cable easement.</p> <p>AA-25 is included in the assessment of LACR-01c in Section 3.</p>
<p>AA-26 (Figure 42, Appendix A)</p>	<p>Alternative permanent access runs west from the A24 past Muntham Farm, using existing tracks and paths to reach the onshore cable corridor. After passing Muntham Farm, one track runs westward towards Blackpatch Covert whilst the other runs north towards Sullington Hill. AA-26 is approximately 3.7km in length and would use the existing tracks and paths where possible.</p> <p>AA-26 is included in the assessment of LACR-01c in Section 3.</p>
<p>AA-27 (Figure 43, Appendix A)</p>	<p>Alternative permanent access provides continuity of access along the cable route. Located 850m South of Cobden Farm, it runs for approximately 100m between 2 adjoining fields along an existing farm track.</p> <p>AA-27 is included in the assessment of LACR-01c in Section 3.</p>
<p>AA-28 (Figure 43, Appendix A)</p>	<p>Alternative temporary construction access from the west connecting with AA-07. This access also provides permanent operational access to the area north of South Fields woodland. This will be via a new temporary stone road for construction access and via the field edge for permanent access.</p> <p>AA-28 is included in the assessment of LACR-02 in Section 2.4.</p>
<p>AA-29 (Figure 43, Appendix A)</p>	<p>Alternative temporary light construction (i.e. site investigation only) and permanent access from Blakehurst lane. AA-29 runs approximately 3km north east along an existing private estate track past Keepers Cottage.</p> <p>AA-29 is included in the assessment of LACR-01a and LACR-02 in Section 3 and Section 2.4.</p>
<p>AA-30 (Figure 46, Appendix A)</p>	<p>Alternative temporary construction and permanent access running 2.4km north from the A27 to Keepers Cottage. A new temporary stone road will be installed which will run parallel to the existing tarmac estate track. Where AA-30 reaches an area of Ancient Woodland (Hammerpot Copse), the existing track will be utilised with construction traffic management and/or provision of suitable passing points.</p> <p>AA-30 continues 450m north from Keepers Cottage along an existing estate road. It then runs through woodland which will require the implementation of construction traffic management and/or new passing places. The northern section of AA-30 includes an allowance for a new</p>

ID	Description
	<p>temporary stone road. Permanent access in this location will use the existing estate road.</p> <p>AA-30 is included in the assessment of LACR-02 in Section 2.4.</p>
<p>AA-31 (Figure 46, Appendix A)</p>	<p>Alternative temporary construction and permanent access runs approximately 550m west from LACR-01b along a new temporary stone road south of Lee Farm Copse. AA-31 joins up with an existing farm track running south for 950m up Barpham Hill. Provision has been made within the AA-31 for passing places/track upgrades if required. A temporary stone road temporary construction access runs approximately 600m to the east of Upper Barpham Farm before joining back to the existing farm track and running approximately 100m south to join LACR-02.</p> <p>Permanent access will continue along the existing estate track used for AA-22 and run west from LACR-01b for 700m along an existing estate road passing through Lee Farm. It then runs south for 350m to the base of Barpham Hill along an existing stone track to join with temporary construction traffic route from the east and travel up Barpham Hill on the existing track. The operation and maintenance vehicles will pass through Barpham Farm joining LACR-02.</p> <p>AA-31 is included in the assessment of LACR-02 (and combined with LACR-01b) in Section 2.4.</p>
<p>AA-32 (Figure 46, Appendix A)</p>	<p>Alternative temporary construction and permanent access runs along the existing Michelgrove estate track (used for AA-23) from LACR-01c for approximately 2km. Provision has been made within AA-32 for new temporary passing places.</p> <p>AA-32 leaves LACR-01c and runs north and west for approximately 1.8km along the existing estate track. It then runs west for approximately 550m along a new temporary stone road south of Lee Farm Copse to join up with an existing farm track running south for 950m up Barpham Hill. Provision has been made within AA-32 for passing places/track upgrades if required. A temporary stone road construction access runs approximately 600m to the east of Upper Barpham Farm before joining back to the existing farm track and running approximately 100m south to join LACR-02.</p> <p>Permanent access leaves LACR-01c continuing along the existing estate track from Michelgrove House for 3.2km and passing through Lee Farm. After Lee Farm, it runs south for 350m to the base of Barpham Hill along an existing stone track to join with temporary construction traffic access from the east where it travels up Barpham Hill on the existing</p>

ID	Description
	track. The operation and maintenance vehicles will pass through Barpham Farm joining LACR-02.
	AA-32 is included in the assessment of LACR-02 (and combined with LACR-01c) in Section 2.4 .

6.2 Environmental review of alternative temporary construction and permanent accesses

6.2.1 Introduction

- 6.2.1.1 A summary table presenting the environmental review for each of the AAs (AA-01 to AA-32) is provided in **Table E1, Appendix E**. The summary table has been completed in line with the review criteria provided in **Table 1-1**.
- 6.2.1.2 Each onshore environmental aspect has reviewed each of the AAs. The findings for the full set of AAs are presented below as summaries by aspect. The summaries serve to highlight where an AA has been identified to interact with a receptor in a new or altered manner compared to what was identified in the PEIR (RED 2021). A conclusion is provided by each aspect as to whether the AAs impact the assessment outcomes and conclusions reported in the PEIR (RED 2021).
- 6.2.1.3 The AAs reported below are those which have not already been assessed as part of the LACRs (**Section 2**), ACRs (**Section 3**) or MRs (**Section 4**).
- 6.2.1.4 The environmental review for AAs has considered the implementation of existing PEIR and new/updated embedded environmental measures, which are noted in **Appendix F**. For the overall PEIR assessment outcomes and conclusions for each aspect, please see the PEIR summary of residual effects tables set out in **Appendix G**.

6.2.2 Summary of environmental review

Socio-economics

- 6.2.2.1 AA-04 will provide alternative temporary construction access and has the potential to further impact footpath 2165 which is a receptor already identified and assessed at PEIR, and which could affect access to and enjoyment of onshore recreation activity. However, considering the implementation of embedded mitigation measures (**Appendix F**), AA-04 does not lead to any additional significant residual effects presented in **Sections 18.9 to 18.15** within **Chapter 18 of the PEIR**. AA-04 is located within the footprint of ACR-02, however these additions/modifications are exclusive of each other. Note that AA-04 will only be taken forward as a standalone access route if ACR-02 is not progressed.

- 6.2.2.2 AA-08 will provide alternative temporary construction and permanent access and has the potential to further impact bridleway 2219, which is a receptor already identified and assessed at PEIR. This could affect access to and enjoyment of onshore recreation activity. This bridleway is part of the promoted 'Monarch's Way' long distance route. However, considering the implementation of embedded mitigation measures (**Appendix F**) for shared-route traffic management, and including a signed alternative route from Bathurst Lane, AA-08 does not lead to any additional significant residual effects and does not change the overall assessment outcomes and conclusions (see **Table G-1** in **Appendix G**) presented in **Sections 18.9** to **18.15** within **Chapter 18** of the **PEIR**.
- 6.2.2.3 AA-09 will provide alternative temporary construction and permanent access and has the potential to further impact bridleway 2260, which is a receptor already identified and assessed at PEIR. This could affect access to and enjoyment of onshore recreation activity. AA-09 changes the assessment by adding additional impacts to the assessment for bridleway 2260, with approximately 3km of the bridleway affected. This frequently used bridleway is a key part of the local network. AA-09 will also impact an unrecorded route which provides an alternative to the formal bridleway in the vicinity of Lower Barpham. However, a co-terminus alternative route is available via bridleways 2173 and 2209. A further alternative is available via restricted byway 2092. Together with embedded mitigation measures (**Appendix F**) including shared-use traffic management operations, AA-09 will not lead to additional significant residual effects presented in **Sections 18.9** to **18.15** within **Chapter 18** of the **PEIR**.
- 6.2.2.4 AA-10 will provide alternative temporary construction and permanent access and has the potential to further impact restricted byway (RB) 2092, which is a receptor already identified and assessed at PEIR. This could affect access to and enjoyment of onshore recreation activity. AA-10 changes the assessment by adding additional impacts to the assessment over approximately 3km of RB 2092. This restricted byway is part of the South Downs Way National Trail (SDW). Although the section directly affected by AA-10 is not designated as national trail it is a significant feeder route to/ from the SDW, carrying similar volumes of recreational traffic to it. An alternative, less direct, route for most users (not carriage drivers) will be available via bridleway 2260 or bridleway 2173. Together with embedded mitigation measures (**Appendix F**) including shared-use traffic management operations, AA-10 will not lead to additional significant residual effects presented in **Sections 18.9** to **18.15** within **Chapter 18** of the **PEIR**.
- 6.2.2.5 AA-14 will provide alternative temporary construction access and permanent access and introduces an additional receptor (bridleway 2711). This could affect access to and enjoyment of onshore recreation activity by increasing the proximity of onshore construction activities to the bridleway. However, considering the implementation of embedded mitigation measures including shared-route traffic management provisions, AA-14 does not lead to any additional significant residual effects and does not change the overall assessment outcomes and conclusions (see **Table G-1** in **Appendix G**) presented in **Sections 18.9** to **18.15** within **Chapter 18** of the **PEIR**.
- 6.2.2.6 The other AAs (AA-01, AA-02, AA-07, AA-11, AA-12, AA-13 and AA-15), considering the implementation of embedded mitigation measures (**Appendix F**), do not change the overall assessment outcomes and conclusions (see **Table G-1**

in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.

- 6.2.2.7 In addition to onshore recreation, other socio-economics receptors identified in the **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2** of the **PEIR** have also been considered for the assessment of socio-economics in the **PEIR SIR**. As noted in the **PEIR** these are economy (jobs and GVA), tourism economy (onshore and offshore) and recreation (inshore and offshore):
- the impact on the economy is assessed for the UK and Sussex study areas and the significance of this impact is not altered by the changes to the onshore route set out in this **PEIR SIR** (negligible for UK and Sussex study areas – **Not Significant**);
 - the impact on tourism economy is considered at the Sussex study area and the changes set out in this **PEIR SIR** have no impact on the significance assessed at **PEIR (Not Significant)**; and
 - the impact on access and enjoyment of inshore and offshore recreation is considered for the inshore part of the PEIR Assessment Boundary (defined as 250m buffer from mean low water for inshore) and the offshore part of the PEIR Assessment Boundary are not affected by any changes to the set out in this **PEIR SIR** and therefore the significance is consistent with what was assessed at **PEIR** (ranging from **Not Significant to Significant**).

Landscape and visual impact

- 6.2.2.8 AA-01 will provide alternative temporary construction and permanent access approximately 500m southeast of the St Mary's Church, through part of an arable field. This will affect the same landscape and visual receptors, previously assessed in **Chapter 19: Landscape and visual impact assessment, Volume 2** of the **PEIR** and there will be no change predicted to levels of effect.
- 6.2.2.9 AA-04 will provide alternative temporary construction access north of Brookside Caravan Park to increase separation distance during construction. The same/similar landscape and visual receptors will be affected with no change/or a slight improvement (visual effects on views from Brookside Caravan Park) to the level and type of likely landscape and visual effects presented in **Chapter 19** of the **PEIR**.
- 6.2.2.10 AA-07 will provide alternative temporary construction access west from Warningcamp, crossing a low hedge and arable field within the SDNP. This will affect the same landscape and visual receptors, previously assessed within **Chapter 19** of the **PEIR**. Although a section of low hedgerow will be affected, considering the implementation of embedded mitigation measures⁴⁶ (**Appendix F**) the effects are unlikely to be significant.
- 6.2.2.11 AA-08 will provide alternative temporary construction and permanent access, up the valley, west from Warningcamp towards Warningcamp Hill, crossing grassland between two areas of Ancient Woodland at Woodleighs and South Woodleighs, and affecting a transitional area Arun Flood Plain and Arun Valley Sides landscape

⁴⁶ See **Appendix F: C-115**.

character. A section of low hedgerow and some mature trees will be affected, although subject to the implementation of embedded mitigation measures⁴⁶ (**Appendix F**). Visual receptors also likely to be affected will include road users and walkers on the Monarch's Way within the SDNP. The level of effect on the Arun Valley Sides landscape character will fall within the range previously assessed in the PEIR and is likely to be **Significant**, although affecting a different geographical area. The level of effect on the Arun Flood Plain landscape character will however increase from that assessed in the PEIR (from Negligible to Major and **Significant**). Visual effects on views experienced by walkers on the Monarch's Way will be significant and temporary. They will fall within the range previously assessed in the PEIR, although affecting a different geographical area.

- 6.2.2.12 Therefore, AA-08 is likely to entail significant effects on part of the Arun Flood Plain landscape character for a temporary period. This does change the overall assessment conclusions presented in **Sections 19.9 to 19.14 within Chapter 19 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.
- 6.2.2.13 AA-09 will provide alternative temporary construction and permanent access, approximately 5.33km in length between the A280/Michelgrove Lane and the onshore cable corridor, via existing farm tracks/PRoW 2260 through an area of the Arun to Adur Open Downs landscape character within the SDNP. The existing road corridor is generally wide and often open to the field on one side. However, there are potential pinch points at Michelgrove with hedgerows and mature trees likely to require some pruning. Although it is assumed that all mature trees will be retained and that there will be no significant effects on landscape elements. Visual receptors also likely to be adversely affected will include road users, residents and walkers on the PRoW 2260 and elevated views from Harrow Hill and Open Access land on Barpham Hill within the SDNP. The level of effect on the Arun to Adur Open Downs landscape character will fall within the range previously assessed in the PEIR, although affecting a different geographical area. Visual effects on views experienced by road users and walkers will also fall within the range previously assessed in the PEIR, although affecting a different geographical area. Views experienced from PRoW 2260 are likely to be significant. The views from some residential receptors may also be significantly affected and these will be assessed as part of a Residential Visual Amenity Assessment in the ES.
- 6.2.2.14 Although AA-09 will affect landscape and visual receptors, it does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8 in Appendix G**) presented in **Sections 19.9 to 19.14 within Chapter 19 of the PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.
- 6.2.2.15 AA-10 will provide alternative temporary construction and permanent access, approximately 3.59km in length between the A280 and the South Downs Way via existing restricted byway (RB) 2092 through an area of the Arun to Adur Open Downs landscape character within the SDNP. The existing road corridor is generally wide and often open to the field on one or both sides. However, there is a potential pinch point at Highden Beeches with mature trees that are likely to require some pruning. Although it is assumed that all mature trees will be retained and that there will be no significant effects on landscape elements. Visual receptors also likely to be affected will include walkers on the South Downs Way

and other PRow within the SDNP. Although AA-10 will affect landscape and visual receptors, it does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the **PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

- 6.2.2.16 AA-11 will provide alternative temporary construction access off the A283, near Hampers Lane, south through an area of the Arun to Adur Scarp Foot Slopes landscape character within the SDNP. AA-11 will cross one roadside hedge, one remnant hedge and open pasture fields. Visual receptors will be limited to road users and residents along the A283 as assessed in the PEIR. The level of effect on the Arun to Adur Scarp Foot Slopes landscape character, associated landscape elements and visual receptors will fall within the range previously assessed in the PEIR, although affecting different geographical areas. The views from some residential receptors may also be significantly affected and these will be assessed as part of a Residential Visual Amenity Assessment in the ES. Although AA-11 will affect landscape and visual receptors, it does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the **PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.
- 6.2.2.17 AA-12 will provide alternative temporary construction access off the A283, near Georges Lane, south through an area of the Arun to Adur Scarp Foot Slopes landscape character within the SDNP. AA-12 will cross one hedgerow, and open pasture fields with scattered mature trees. Visual receptors will be limited to road users and residents along the A283 at a location where there are open views into the SDNP. The level of effect on the Arun to Adur Scarp Foot Slopes landscape character, associated landscape elements and visual receptors will fall within the range previously assessed in the PEIR, although affecting different geographical areas. The views from some residential receptors may also be significantly affected and these will be assessed as part of a Residential Visual Amenity Assessment in the ES. AA-12 does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the **PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.
- 6.2.2.18 AA-14 will provide approximately 185m of additional temporary construction and permanent access off bridleway 2711 and the A283, through an area of Wiston Low Weald landscape character just north of the SDNP. AA-14 will cross two hedgerows with trees north of a small coniferous plantation which will be subject to the implementation of embedded mitigation measures⁴⁶ (**Appendix F**). Visual receptors will be limited to road users and residents along the A283/PRow 2711. The level of effect on landscape and visual receptors will fall within the range previously assessed in the PEIR, although affecting different geographical areas. The views from some residential receptors may also be significantly affected and these will be assessed as part of a Residential Visual Amenity Assessment in the ES. AA-14 does not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the **PEIR**. The LVIA will be updated in line with the ES Assessment Boundary and presented at ES.

- 6.2.2.19 AA-15 will provide approximately 275m of permanent access, following an existing access track through Oakfield Farm/Eastfield Stud to Wineham Lane, within an area of Eastern Low Weald landscape character. AA-15 includes some areas where there are mature trees and shrubs close to or overhanging the road and some light pruning is likely to be required to maintain access and visibility splays. Visual receptors will be limited to local residents at the Eastridge Manor nursing home, Oakfield Farm, Eastridge Lodge and Eastfield Stud which share the same access and users of the PRoW 1789 and road users on Wineham Lane. The effects are likely to be negligible/zero. The levels of landscape and visual effect will fall within the range previously assessed for these receptors in the PEIR, although affecting different geographical areas. The views from residential receptors (including the nursing home) will be assessed as part of a Residential Visual Amenity Assessment in the ES. AA-15 does not therefore change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8 in Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the PEIR. The LVIA will be updated in line with the ES Assessment Boundary and associated survey and presented at ES.

Air quality

- 6.2.2.20 Alternative temporary construction and permanent accesses AA-09 and AA-10 and permanent access AA-15 introduce additional air quality receptors in the proximity of the accesses. Considering the implementation of embedded environmental measures (**Appendix F**), the introduction of new sensitive receptors will not change the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**) provided in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2** of the PEIR. The air quality assessment will be updated in line with the ES Assessment Boundary and presented in the ES.
- 6.2.2.21 There are no additional receptors or change to air quality receptors presented in the PEIR as a result of the other AAs (AA-01 to AA-08 and AA-11 to AA-14). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the overall assessment outcomes and conclusions (see **Table G-8 in Appendix G**) presented in **Sections 20.9 to 20.15** within **Chapter 20** of the PEIR.

Soils and agriculture

- 6.2.2.22 There are no additional receptors or change to existing soils and agriculture receptors presented in the PEIR as a result of additional temporary construction and permanent accesses (AA-01 to AA-15). The total area of land where effects on soil and agricultural land receptors could occur was calculated at PEIR stage as 206.95ha. The AAs (AA-01 to AA-15) will increase this total by 20.5ha, this equates to a 9.9% increase in the area of ground potentially subject to temporary disturbance during construction. The permanent accesses will be via existing access tracks or on foot, with the exception of the onshore substation which requires one new permanent access. This reflects design evolution since the PEIR and the onshore substation permanent access will require an area of land of approximately 0.22ha. Considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions presented (see **Table G-9 in Appendix G**) in

Sections 21.9 to 21.15 within Chapter 21: Soils and agriculture, Volume 2 of the PEIR.

Noise and vibration (onshore)

- 6.2.2.23 Temporary construction and permanent accesses AA-09 and AA-10 and permanent access AA-15 introduce additional noise and vibration receptors in the proximity of the accesses. However, the assumed likely volume of construction and/or operational traffic does not change the assessment of temporary and permanent accesses in **Section 22.9** within in **Chapter 22: Noise and vibration (onshore), Volume 2 of the PEIR**. The assessment of temporary and permanent accesses will be updated in line with the ES Assessment Boundary and presented in the ES.
- 6.2.2.24 There are no additional receptors or change to noise sensitive receptors presented in the PEIR as a result of the other AAs (AA-01 to AA-08 and AA-10 to AA-14). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the overall assessment outcomes and conclusions (see **Table G-10** in **Appendix G**) presented in **Sections 22.9 to 22.15** within **Chapter 22** of the **PEIR**.

Terrestrial ecology and nature conservation

- 6.2.2.25 AA-01 will provide alternative temporary construction and permanent access and includes a small additional area within an arable field, much of which is already within the onshore part of the original PEIR Assessment Boundary. There are no changes to ecological features present or the overall assessment outcomes and conclusions (see **Table G-11** in **Appendix G**) presented in **Sections 23.10 to 23.14** within **Chapter 23: Terrestrial ecology, Volume 2 of the PEIR**.
- 6.2.2.26 AA-02 will provide alternative permanent access and is an existing track bound in places by tree lines. The trees will be retained and therefore, there are no changes to the assessment outcomes and conclusions for the habitats present (see **Table G-11** in **Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.
- 6.2.2.27 AA-04 will provide alternative temporary construction access and requires access over an arable field already within the onshore part of the original PEIR Assessment Boundary. However, it does require the creation of an additional entrance way (6m in extent) being created within an existing hedgerow (an HPI). AA-04 does not change the assessment outcomes and conclusions for hedgerows (see **Table G-11** in **Appendix G**) provided in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.
- 6.2.2.28 AA-07 provides an alternative temporary construction access across an arable field, some of which is already within the onshore part of the original PEIR Assessment Boundary. The proposed entrance is at a point where there is no hedgerow. Therefore, AA-07 does not change the assessment outcomes and conclusions for the habitats present (see **Table G-11** in **Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.
- 6.2.2.29 AA-08 will provide alternative temporary construction and permanent access and lies within an area of marshy grassland that lies between areas of Ancient

Woodland and is adjacent to the Warningcamp Hill and New Down LWS. The fields are already used to gain access to the LWS (for the management of cattle) although no definitive track is present. Within **Chapter 23 of the PEIR**, the extent of marsh/marshy grassland present within the onshore part of the original PEIR Assessment Boundary was very small and was therefore scoped out. Given the extent and connectedness of this habitat, AA-08 will result in this ecological feature being scoped into the assessment. However, the effects will still be small in scale and temporary suggesting a conclusion of no significant effect.

- 6.2.2.30 AA-09 will provide alternative temporary construction and permanent access and runs along an existing track that is bound by fields, small blocks of woodland and hedgerows. In the majority of locations along AA-09, it is expected that all hedgerows and trees could be retained. Although there will be some loss of pasture and arable land for passing places and other works. The retention of hedgerows and trees, and the implementation of embedded environmental measures (**Appendix F**), results in no additional effects on ecological features than those predicted in the PEIR. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), AA-09 does not change the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23 of the PEIR**.
- 6.2.2.31 AA-10 will provide alternative temporary construction and permanent access and runs along an existing track and pasture and arable fields, and is bound by fields, small blocks of woodland (including Ancient Woodland) and hedgerows. In the majority of locations along AA-10, it is expected that all hedgerows and trees could be retained. Although there will be some loss of pasture and arable land for passing places and other works. The retention of hedgerows and trees and 25m stand off from Ancient Woodland, along with the implementation of other embedded environmental measures (**Appendix F**), results in no additional effects on ecological features than those predicted in the PEIR. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), AA-10 does not change the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23 of the PEIR**.
- 6.2.2.32 AA-11 will provide alternative temporary construction access and crosses arable fields and a hedgerow that are typical of the area assessed in **Chapter 23**. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), AA-11 does not change the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23 of the PEIR**.
- 6.2.2.33 AA-12 will provide alternative temporary construction access and crosses the same agricultural field as an access route described in **Chapter 23**. AA-12 has been formed to avoid the trees within the field and therefore the level of effect is comparable with that in the PEIR. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), AA-12 does not change the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23 of the PEIR**.
- 6.2.2.34 AA-13 will provide alternative permanent access and is an existing track bound in places by tree lines. The trees will be retained and therefore, there are no changes

to the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.

- 6.2.2.35 AA-14 will provide alternative temporary construction and permanent access and utilises an existing track and field entrance to gain access to an arable field just south of the onshore cable corridor. It crosses an additional hedgerow to enter the working area requiring a 6m gap to be created. Although an additional hedgerow is crossed, this will not alter the assessment outcomes and conclusion of the overall hedgerow assessment (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.
- 6.2.2.36 AA-15 will provide alternative permanent access and is an existing track bound in places by tree lines. The trees will be retained and therefore, there are no changes to the assessment outcomes and conclusions for the habitats present (see **Table G-11 in Appendix G**) outlined in **Sections 23.10 to 23.14** within **Chapter 23** of the **PEIR**.

Transport

- 6.2.2.37 The AAs result in new accesses to local roads including Crossbush Lane (AA-07 and AA-08), A280 (AA-09, AA-11 and AA-12) and A283 (AA-10) and these will be reflected in the **outline CTMP** provided alongside the DCO Application.
- 6.2.2.38 The standalone AAs and those associated with the ACRs will not result in a material change in construction traffic numbers and therefore impacts will be no worse than assessed within **Chapter 24: Transport, Volume 2** of the **PEIR**.
- 6.2.2.39 Considering the implementation of embedded environmental measures (**Appendix F**), the AAs do not change the overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24** of the **PEIR**.

Ground conditions

- 6.2.2.40 There are no additional receptors or change to existing ground conditions receptors presented in the PEIR as a result of AAs (AA-01 to AA-15). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the assessment outcomes and conclusions (see **Table G-13 in Appendix G**) presented in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

Historic environment

AA-04

- 6.2.2.41 AA-04 will provide alternative temporary construction access and lies within 40m of the Lyminster Conservation Area and also within 90m Church Farmhouse (1276284). These designated heritage assets are of high heritage significance for their architectural interests in line with criteria set out in PEIR. Key views from the Conservation Area are to the north toward Arundel Castle and Park. Whilst existing mature planting along the southern boundary of the Conservation Area

and around the Church Farmhouse heavily restricts views to the south and southwest. The fields south of the Conservation Area provide some link to the agricultural history of the rural settlement of Lyminster but this makes a limited contribution to the historic interest of these heritage assets.

- 6.2.2.42 AA-04 may increase the perceptibility of temporary construction activities from these designated heritage assets. However, this is expected to be experienced as audible changes rather than visual due to existing planting, which limits any visual connection between these assets and the land through which AA-04 crosses. Temporary construction activities within AA-04 will alter the rural character of this landscape having a limited impact on heritage interests. However, these changes will be time-limited and any adverse effects will be temporary.
- 6.2.2.43 AA-04 is considered likely to introduce a low magnitude of change to the setting of the Lyminster Conservation Area and Church Farmhouse (1276284) resulting in a moderate adverse effect, which according to the classification of effects set out in the PEIR, could potentially be significant. However, taking into consideration the discussion above, the assessment of residual effects on these designated heritage assets will be **Not Significant** in EIA terms.
- 6.2.2.44 Whilst other designated heritage assets are identified within 1km of AA-04 in addition to those at PEIR stage, due to the nature of the assets, topography, intervening planting and built infrastructure, and the relative distance from AA-04, development within AA-04 is unlikely to impact the setting of other heritage assets and therefore no effects are anticipated. The assessment of designated heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.
- 6.2.2.45 AA-04 does not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change the assessment outcomes and conclusions for these receptor types (see **Table G-14** in **Appendix G**) than was presented in **Section 26.9** within **Chapter 26: Historic environment, Volume 2 of the PEIR**. AA-04 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16**.

AA-09

- 6.2.2.46 AA-09 will provide alternative temporary construction and permanent access and introduces new known receptors additional to those identified at PEIR stage, including a scheduled monument and Archaeological Notification Area (ANA).
- 6.2.2.47 The scheduled monument comprises a Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446). This designated heritage asset is of high heritage significance primarily for archaeological interests (in line with criteria set out in **Table 26-20** within **Chapter 26 of the PEIR**). The Bronze Age Itford Hill style settlement, most of which has been levelled by modern ploughing, survives mainly in the form of buried features visible as crop marks on aerial photographs. Evidence has also been found here for earlier neolithic activity. The Anglo-Saxon barrow field comprises 16 circular barrows which are now levelled by modern ploughing, two of which have been found to contain inhumation burials. AA-09 follows an existing track which crosses the scheduled monument. Impacts

to the scheduled monument will be avoided through use of non-intrusive access construction methods, including implementation of embedded environmental measure C-13 (**Appendix F**).

- 6.2.2.48 The ANA relates to multi-period archaeological features on Harrow Hill. AA-09 specifically crosses the edge of an area defined within the HER data as comprising a Roman lynchet system, two possible hut sites, and a rectangular medieval enclosure. Roman pottery and building materials have been reportedly recovered from the area. AA-09 follows an existing track which runs along the perimeter of this ANA.
- 6.2.2.49 There is generally a medium to high potential for the presence of as yet unknown archaeological remains elsewhere along AA-09 which may relate to multiple periods including the prehistoric, Roman, medieval, post medieval and World War Two. Overall, it is considered that the heritage significance (sensitivity) of archaeological receptors range from low to high.
- 6.2.2.50 Where there are road upgrades or passing places required, temporary construction activities requiring intrusive methods will remove or truncate buried deposits with archaeological interest. However, given the limited extent of works required and the anticipated construction depth of AA-09 in relation to the extent of the known and potential archaeological assets, a low to medium magnitude of change is likely. This could lead to potentially significant adverse effects, which will be permanent. However, further information obtained by field investigations and implementation of embedded environmental measures (C-79, C-80 and C-81 in **Appendix F**) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms.
- 6.2.2.51 AA-09 passes within 120m of Michelgrove Cottages (1217075) and 170m of the Ruins of Michelgrove (1353888). These are both grade II listed buildings, which are of high heritage significance primarily for architectural interests (in line with criteria set out in the **PEIR**). These two listed buildings are set within the same property and are heavily screened from the existing access road by dense tall tree planting to the east and south. This means there is no intervisibility between AA-09 and these two designated heritage assets. The use of the access AA-09 for construction traffic may introduce noise to the setting of these listed buildings additional to that already experienced by existing use of the access road. AA-09 is considered likely to introduce a very low magnitude of change resulting in a minor adverse effect, which will be **Not Significant** in EIA terms.

AA-10

- 6.2.2.52 AA-10 will provide alternative temporary construction and permanent access and introduces new known receptors additional to those identified at PEIR stage. AA-10 lies adjacent to scheduled monument, the Muntham Court Romano-British site (1005850). This is of high heritage significance primarily for archaeological interests (in line with criteria set out in **Table 26-20** within **Chapter 26** of the **PEIR**). The asset comprises an Iron Age defended settlement and Romano-British shrine surviving as earthworks and below-ground remains. The listing description for this asset suggests further archaeological remains survive in the vicinity of the monument but are not included because they have not been formally assessed.

There is high potential for associated archaeological remains to be present at AA-10. There will be no direct impact to the scheduled monument and impacts to associated non-designated remains will be avoided through use of non-intrusive access construction methods, including implementation of embedded environmental measure C-13 (**Appendix F**). There will also be no passing places on this section of AA-10 which lies adjacent to the scheduled monument.

- 6.2.2.53 AA-10 lies within 10m of a barrow site, which originally was constructed in the Bronze Age and later reused in the Anglo-Saxon period. Previous excavations found two Saxon secondary cremations and a cinerary urn. The northern section of AA-09 encounters an ANA, which was identified at PEIR stage.
- 6.2.2.54 There is a medium to high potential for the presence of as yet unknown archaeological remains elsewhere along AA-10 which may relate to multiple periods including the prehistoric, Roman, medieval, post medieval and World War Two. Overall, it is considered that the heritage significance (sensitivity) of archaeological receptors range from low to high.
- 6.2.2.55 Where there is new road or road upgrades on AA-10, temporary construction activities requiring intrusive methods will remove or truncate buried deposits with a high potential for archaeological interest. However, given the width and anticipated construction depth of AA-10 in relation to the extent of the known and potential archaeological assets a low to medium magnitude of change is likely. This could lead to potentially significant adverse effects which will be permanent. However, further information obtained by field investigations and implementation of embedded environmental measures C-79, C-80 and C-81 (**Appendix F**) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms.

AA-11

- 6.2.2.56 AA-11 will provide alternative temporary construction access and lies within close proximity to two grade II listed buildings, being within 10m from Chanctonbury Lodge (1027239) and within 20m of Old Clayton (1039953). These are of high heritage significance primarily for their architectural interests and some historic interest, (in line with criteria set out in **Table 26-20** within **Chapter 26** of the **PEIR**).
- 6.2.2.57 Temporary construction activities associated with AA-11 may be perceptible. However, the existing screening provided by intervening hedge and tree planting, together with the existing noise from traffic movements along the adjacent A283 Washington Road means perception of temporary construction activities can be expected to be limited. There will be a change to the rural character of the agricultural land to the east/southwest of Chanctonbury Lodge (1027239). These changes will be experienced to varying degrees through the construction phase, any impact will be time-limited.
- 6.2.2.58 At PEIR stage, no effects were anticipated for Old Clayton (1039953). AA-11 is considered likely to introduce a very low magnitude of change resulting in a minor adverse effect, which will be **Not Significant** in EIA terms. The assessment for Chanctonbury Lodge (1027239) remains unchanged from PEIR as presented in **Table 26-26** within **Chapter 26** of the **PEIR**.

- 6.2.2.59 AA-11 does not introduce new known archaeological receptors or other non-designated heritage assets. Therefore, there is no change to the assessment outcomes and conclusions for these receptor types (see **Table G-14** in **Appendix G**) than was presented at PEIR stage. AA-11 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26** of the **PEIR**. The assessment of effects on heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.

AA-14

- 6.2.2.60 AA-14 will provide alternative temporary construction and permanent access and is within 15m of grade II listed building The Old School (1284545), a former mid-19th century school, now a house. However, this western part of the access is operational only and uses an existing track requiring no additional works. The eastern part of AA-14 is for temporary construction access only and is heavily screened from the asset by existing planting. There is no change to the assessment outcomes and conclusions for this receptor than was presented at PEIR stage.
- 6.2.2.61 AA-14 does not introduce new known archaeological receptors or other non-designated heritage assets, and there is no change to the assessment outcomes and conclusions for these receptor types (see **Table G-14** in **Appendix G**) than was presented at PEIR stage in **Section 26.9** within **Chapter 26** of the **PEIR**. AA-14 does not change the requirement for further survey work to support the historic environment baseline and assessment at ES, as outlined in **Section 26.16** within **Chapter 26** of the **PEIR**. The assessment of effects on heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.
- 6.2.2.62 The other AAs (AA-01, AA-05, AA-08 to AA-12 and AA-15) do not change the overall assessment outcomes and conclusions presented in **Sections 26.9** to **26.15** within **Chapter 26** of the **PEIR**.

Water environment

- 6.2.2.63 AA-08 will provide temporary construction and permanent access and crosses additional floodplain associated with the River Arun at the base of the Warningcamp valley. AA-08 includes a range of embedded environmental measures (**Appendix F**) to minimise the potential for displacement of flood water identified at PEIR stage. Therefore, considering the implementation of embedded environmental measures (**Appendix F**), AA-08 does not change the overall assessment outcomes and conclusions (see **Tables G-15** to **G-21** in **Appendix G**) presented in **Sections 27.9** to **27.11** within **Chapter 27: Water environment, Volume 2** of the **PEIR**.
- 6.2.2.64 There are no additional receptors or change to existing water environment receptors presented in the **PEIR** as a result of the other AAs (AA-01 to AA-07 and AA-09 to AA-15). Therefore, considering the implementation of embedded environmental measures (**Appendix F**), there are no changes to the overall assessment outcomes and conclusions (see **Tables G-15** to **G-21** in **Appendix G**) presented in **Sections 27.9** to **27.11** within **Chapter 27** of the **PEIR**.

Major accidents and disasters

- 6.2.2.65 There are no new receptors or change to existing major accidents and disasters receptors presented in the **PEIR** as a result of AAs (AA-01 to AA-15). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2 of the PEIR**.

Greenhouse gas assessment

- 6.2.2.66 There are no new receptors or change to existing greenhouse gas assessment receptors presented in the **PEIR** as a result of AAs (AA-01 to AA-15). Therefore, there are no changes to the overall assessment outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Appendix 5.2: Greenhouse gas assessment, Volume 2 of the PEIR**.

6.3 Conclusion

- 6.3.1.1 The alternative temporary construction and permanent accesses will alter the receptor types in a number of instances to those presented in the **PEIR**. These are summarised below, with further detail on the environmental review provided in **Section 5.2** of this **PEIR SIR**.
- 6.3.1.2 For alternative temporary construction access AA-04, a change to the setting of the Lyminster Conservation Area and Church Farmhouse (1276284) has been identified. However, the assessment of residual effects on these designated heritage assets will be **Not Significant** in EIA terms. The assessment of designated heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.
- 6.3.1.3 For alternative temporary construction and permanent access AA-08, the additional receptors assessed for the landscape and visual impact will potentially lead to **Significant** effects for a temporary period in the upper part of the valley. This will change the overall assessment conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2 of the PEIR**.
- 6.3.1.4 There is an additional ecological receptor assessed within AA-08. The receptor is an area of marshy grassland that lies between areas of Ancient Woodland and is adjacent to the Warningcamp Hill and New Down LWS. Given the extent and connectedness of this habitat, AA-08 results in this ecological feature being scoped into the assessment. However, the effects will be small in scale and temporary, suggesting a conclusion of no significant effects and no change to overall assessment conclusions presented in **Sections 18.9 to 18.15** within **Chapter 23 of the PEIR**.
- 6.3.1.5 Alternative temporary construction and permanent access AA-09 introduces new known receptors additional to those identified at PEIR stage, including a scheduled monument and Archaeological Notification Area (ANA). Given the limited extent of works required and the anticipated construction depth of AA-09 in relation to the extent of the known and potential archaeological assets, a low to medium magnitude of change is likely. This could lead to potentially significant

adverse effects, which will be permanent. However, further information obtained by field investigations and implementation of embedded environmental measures (C-79, C-80 and C-81 in **Appendix F**) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms. AA-09 passes within 120m of Michelgrove Cottages (1217075) and 170m of the Ruins of Michelgrove (1353888) and is considered likely to introduce a very low magnitude of change resulting in a minor adverse effect, which will be **Not Significant** in EIA terms.

- 6.3.1.6 Alternative temporary construction and permanent access AA-10 lies adjacent to scheduled monument, the Muntham Court Romano-British site (1005850). There is high potential for associated archaeological remains to be present at AA-10. There will be no direct impact to the scheduled monument and impacts to associated non-designated remains will be avoided through use of non-intrusive access construction methods, including implementation of embedded environmental measure C-13 (**Appendix F**). Overall, it is considered that the heritage significance (sensitivity) of archaeological receptors range from low to high.
- 6.3.1.7 Where there is new road or road upgrades on AA-10, temporary construction activities requiring intrusive methods will remove or truncate buried deposits with a high potential for archaeological interest. However, given the width and anticipated construction depth of AA-10 in relation to the extent of the known and potential archaeological assets a low to medium magnitude of change is likely. This could lead to potentially significant adverse effects which will be permanent. However, further information obtained by field investigations and implementation of embedded environmental measures C-79, C-80 and C-81 (**Appendix F**) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms.
- 6.3.1.8 A full assessment of all proposed changes taken forward into the DCO Application will be presented in the ES submitted by RED in support of the Application.

7. Environmental considerations – all alternatives and modifications

7.1 Introduction

7.1.1.1 This Section provides an overall summary of the environmental review for each relevant onshore aspects when considering all the alternatives and modifications taken together. This Section has considered the PEIR Assessment Boundary, including relevant alternatives and modifications, separately to the LACRs, including the relevant alternatives and modifications, due to the LACRs extents and deviating geographically from the onshore part of the original PEIR Assessment Boundary. This Section provides the environmental considerations for the following route scenarios:

- PEIR Assessment Boundary including ACRs (ACR-01 – ACR-07), MRs (MR-01 – MR-14), TCs (TC-01 – TC-21) and AAs (AA-01 – A-15) considered together. These are assessed in **Section 7.2**;
 - ▶ This includes for all alternatives and modifications associated with the original PEIR Assessment Boundary; and
 - ▶ This excludes LACR-01 and LACR-02 (and associated alternatives and modifications) which are assessed separately in **Section 7.3**.
- LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 including relevant ACRs (ACR-01, ACR-02 (for LACR-02 only), ACR-03 (for LACR-02 only), ACR-06 and ACR-07), MRs (MR-01, MR-02, MR-03 (LACR-02 only) and MR-06 – MR-14), TCs (TC-01 – TC-04 and TC-12 – TC-33) and AAs (AA-01 – AA-03, AA-05, AA-06 (LACR-02 only) AA-11 – AA-29) considered together. These are assessed in **Section 7.3**;
 - ▶ This includes for all relevant alternatives and modifications associated with PEIR Assessment Boundary required in addition to LACR-01 and LACR-02;
 - ▶ Where appropriate for the assessments, the scenarios have taken into account the following route combinations, LACR-01a and LACR-01b, LACR-01a and LACR-01c, LACR-02 and LACR-01b and LACR-02 and LACR-01c; and
 - ▶ This excludes the original PEIR Assessment Boundary and those alternatives and modifications relevant only to the PEIR Assessment Boundary which are assessed separately in **Section 7.2**.

7.1.1.2 The environmental reviews are based on a maximum design scenario and consider all the alternative and modifications together per environmental aspect. The environmental assessment does not take account of the potential for removal of areas as the design evolves or the removal of the second onshore substation option.

- 7.1.1.3 An indication is provided as to the anticipated change expected to the overall assessment outcomes and conclusions presented in the PEIR. The summary is supported by and should be read in conjunction with **Appendix G** which includes the relevant summary of residual effects tables included in the PEIR.

7.2 Environmental considerations – PEIR Assessment Boundary including relevant ACRs, MRs, TCs and AAs

- 7.2.1.1 A summary of the environmental review per aspect is provided below for the PEIR Assessment Boundary including ACRs (ACR-01 – ACR-07), MRs (MR-01 – MR-14), TCs (TC-01 – TC-21) and AAs (AA-01 – AA-15) considered together.

7.2.2 Socio-economics

- 7.2.2.1 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary, considering the implementation of embedded environmental measures (**Appendix F**), do not change the overall assessment outcomes and conclusions (see **Table G-1** in **Appendix G**) presented in **Sections 18.9** to **18.15** within **Chapter 18: Socio-economics, Volume 2** of the PEIR.

7.2.3 Landscape and visual impact

- 7.2.3.1 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary, considering the implementation of embedded environmental measures (**Appendix F**), do not change the overall assessment outcomes and conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9** to **19.14** within **Chapter 19: Landscape and visual impact assessment, Volume 2** of the PEIR. In some cases, there will be effects on different geographical areas of the landscape and visual receptors, previously assessed in the PEIR. Implementation of embedded environmental measures will be required (see **Appendix F**).

7.2.4 Air quality

- 7.2.4.1 The construction traffic generation associated with the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary has not changed from that assessed at PEIR Stage. Consequently, there is no change anticipated to the air quality assessments of construction traffic across all proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary. Therefore, there is also no anticipated change to the assessment outcomes and conclusions (see **Tables G-8** and **G-10** in **Appendix G**) of the construction traffic assessments presented in **Sections 20.9** to **20.15** within **Chapter 20: Air quality, Volume 2** of the PEIR.
- 7.2.4.2 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs), introduce a small number of additional residential receptors. However, this will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see **Table G-8** in **Appendix G**, noting embedded

environmental measures C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26** from **Chapter 20** of the **PEIR**) provided in **Sections 20.9 to 20.15** within **Chapter 20** of the **PEIR**.

- 7.2.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the final ES Assessment Boundary and reported in the ES as per the final route selected.

7.2.5 Soils and agriculture

- 7.2.5.1 The soils and agriculture assessment in **Chapter 21: Soils and agriculture, Volume 2** of the **PEIR** considers a maximum design scenario where a total of 206.95ha of land is potentially subject to temporary ground disturbance as a result of Rampion 2. The assessment also considers a maximum total area of 5.9ha where there could be permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure. Using the same basis for the maximum design scenario as in the **Chapter 21 of the PEIR**, based on a 197.5ha onshore cable corridor (based on a total onshore cable length of 40.25km in a 50m wide corridor), 17.8ha of temporary construction compounds, up to 5.9ha for the permanent onshore substation development area and 2.5ha for the onshore substation temporary works area, the total area of temporary ground disturbance is 227.45ha, which is an increase of 9.9%. The effects of the removal of the second onshore substation option, associated onshore cable corridor and temporary construction compound areas have not been taken into account in this calculation, this means that the previous substation area has not been removed and the assessment therefore represents a worst-case scenario.
- 7.2.5.2 The maximum area of permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure and the onshore cable route reflects the design evolution since PEIR stage and has increased due to additional design information becoming available. This now includes 5.9ha for the onshore substation, 0.22ha of land for permanent access to the onshore substation, and 0.4ha of fenced off land required for above ground access to joint bays/link boxes (based on 50 fenced areas and a maximum likely frequency of one joint bay/link box every 800m of onshore cable route, typically 80m² each), which results in a total area of permanent development of 6.52ha. This is an increase of 10.5% in relation to the loss of agricultural land/soil's food/crop production function, compared to the PEIR estimate of 5.9ha of permanent soil loss. The updated area of soil removed because of the joint bay/link box compounds is worst case, as it will be considerably less than 6.52ha due to the joint bays/link box structures only extending to a few square metres, and other than at the permanent structure, the soil within the compound will be restored and grassed, maintaining other soil functions. However, it is assumed that fencing will be retained around the joint bay/link box compounds, effectively sterilising the soil as an agricultural resource (loss of soil biomass function) during the operational phase.
- 7.2.5.3 Although the areas of temporary ground disturbance and permanent ground disturbance increase, there is no change to the predicted effects. This takes into consideration the implementation of the embedded environmental measures (**Appendix F**) to reduce effects on soil and agricultural land caused by temporary construction activities. The inclusion of the proposed alternatives and

modifications (ACRs, MRs, AAs and TCs) taken together, considering the implementation of embedded environmental measures (**Appendix F**), do not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

7.2.6 Noise and vibration (onshore)

7.2.6.1 The construction traffic generation associated with the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary has not changed from that assessed at PEIR Stage. Consequently, there is no change anticipated to the noise assessments of construction traffic across all proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together. Therefore, there is also no anticipated change to the assessment outcomes and conclusions (see **Tables G-8** and **G-10** in **Appendix G**) of the construction traffic assessments presented in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the **PEIR**.

7.2.6.2 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary introduce additional receptors for the noise and vibration assessment, in particular with the addition of new trenchless crossing at Lyminster (TC-03). However, based on the assessment approach undertaken at PEIR stage and the embedded environmental measures outlined, the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary do not change the overall conclusions of the noise and vibration assessment as per **Section 22.9** within **Chapter 22** of the **PEIR**.

7.2.7 Terrestrial ecology and nature conservation

7.2.7.1 The terrestrial ecology assessment within **Chapter 23: Terrestrial ecology, Volume 2** of the **PEIR** considered each ecological feature across the entire onshore cable corridor and onshore substation search area (including the options present). The potential for the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together to alter the outcome of the assessment, has also been considered at the same scale (i.e. in light of information on ecological features and the Proposed Development between landfall and connection point). Given that the extent of each proposed alternatives and modification are relatively small in the context of the entire onshore infrastructure, the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together do not change the outcomes described at PEIR. (see **Table G-11** in **Appendix G**) as provided in **Sections 23.10** to **23.14** within **Chapter 23** of the **PEIR**. As the overall design becomes finalised prior to the DCO application, the opportunity to understand more fully the realistic worst-case scenario (including new and updated embedded environmental measures) will likely enable some of the significant effects identified at PEIR to be revised to **Not Significant**. Additionally, the effects of fragmentation can be better understood and assessed.

7.2.8 Transport

7.2.8.1 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) with the original PEIR Assessment Boundary have been reviewed for traffic generation and

it is considered that the assessment presented at PEIR, based on a maximum design scenario, remains valid at this stage. The alternatives and modifications (ACRs, MRs, AAs and TCs) taken together may alter the traffic generation/distribution that was presented at PEIR stage, but these are not considered to be significant enough to require a full reassessment. Therefore, as the traffic generation has not changed significantly since PEIR stage, there is no change to the overall assessment outcomes and conclusions (see **Table G-12** in **Appendix G**) presented in **Sections 24.10 to 24.16** within **Chapter 24: Transport, Volume 2** of the **PEIR**. A fully detailed transport environmental assessment will be completed at the ES stage considering the final ES Assessment Boundary.

7.2.9 Ground conditions

7.2.9.1 For the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary, considering the implementation of embedded environmental measures (see **Appendix F**), there is no change to the environmental receptors or assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9 to 25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

7.2.10 Historic environment

7.2.10.1 The historic environment assessment within the **PEIR** (RED, 2021) considered potential effects on historic environment receptors in **Chapter 26: Historic environment, Volume 2** of the **PEIR**. **Sections 3 to 6** of the **PEIR SIR** evaluate whether the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) will result in changes to the assessment outcomes and conclusions of the **PEIR**. The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) have the potential to introduce new receptors (designated and non-designated heritage assets) not identified at PEIR stage and to change the magnitude of effect on some individual receptors identified and assessed at PEIR stage (as detailed within **Sections 3-6**). Where the different combination of ACRs, MRs, AAs and TCs options are taken together with elements of the PEIR Assessment Boundary in the final design stage, the historic environment effects identified in the **PEIR SIR**, will be considered cumulative. However, considering the implementation of embedded environmental measures (see **Appendix F**), where new receptors or changes to magnitude of effects on known receptors have been identified, these are not anticipated to be significant. Therefore, the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary do not change the assessment outcomes and conclusions than was presented at PEIR stage (see **Table G-14** in **Appendix G**, noting commitments⁴⁷) in **Section 26.9** within **Chapter 26** of the **PEIR**. A detailed baseline and the overall assessment for archaeological receptors will be undertaken in full at the ES stage.

⁴⁷ See **Appendix F: C-1, C-5, C-6, C-9, C-11, C-12, C-13, C-19, C-21, C-22, C-24, C-26, C-27, C-61, C-79, C-80, C-81, C-82, C-115, C-133 and C-157**.

7.2.11 Water environment

7.2.11.1 The water environment assessment within the PEIR (RED, 2021) considered potential effects on a range of individual receptors which were identified across the onshore cable corridor and onshore substation search areas in **Section 27.9 to Section 27.11** within **Chapter 27: Water environment, Volume 2 of the PEIR**. **Sections 3 to 6** of the PEIR SIR evaluate whether there will be any changes to the assessment outcomes and conclusions of the PEIR at specific geographic locations. **Section 3.6** outlines that there could be a potential change to the outcome of the assessment associated with the various options at ACR-04 which will need to be subject to further investigation at the ES stage, via the implementation of a detailed hydrological risk assessment. There were no new environmental receptors identified at ACR-04. For all other alternatives and modifications with the original PEIR Assessment Boundary, there has been no change to the environmental receptors or overall assessment outcomes reported on the basis of changes being limited in their nature and extent in comparison to the original PEIR proposals. As such it is considered unlikely that, as a result of the proposed alternatives and modifications taken together, there will be a change to the overall preliminary assessment (see **Tables G-15 to G-21 in Appendix G**) in **Section 27.12 to 27.14 of Chapter 27 of the PEIR**. The overall project wide water environment effects will be revisited and assessed further in the ES.

7.2.12 Major accidents and disasters

7.2.12.1 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary do not change the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11** within **Chapter 28: Major accidents and disasters, Volume 2 of the PEIR**.

7.2.13 Greenhouse gas assessment

7.2.13.1 The proposed alternatives and modifications (ACRs, MRs, AAs and TCs) taken together with the original PEIR Assessment Boundary do not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4 of the PEIR**.

7.3 Environmental considerations – LACR-01 and LACR-02 including relevant ACRs, MRs, AAs and TCs

7.3.1.1 A summary of the environmental review per aspect is provided below for LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 with the relevant ACR, MRs, AAs and TCs considered together.

7.3.2 Socio-economics

7.3.2.1 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) or LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, considering the implementation of embedded environmental

measures (**Appendix F**), the new significant effects on PRoWs will change the overall assessment outcomes and conclusions (see **Table G-1** in **Appendix G**) presented in **Sections 18.9 to 18.15** within **Chapter 18: Socio-economics, Volume 2 of the PEIR**. Overall whole project/project-wide socio-economic effects, including cumulative effects will be further assessed in the ES.

7.3.3 Landscape and visual impact

7.3.3.1 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02, along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs), see **Paragraph 7.1.1.1**, will introduce new landscape and visual receptors (not identified at PEIR stage. LACR-01 and LACR-02 will also affect different geographical areas of landscape and visual receptors, at different levels when compared to those previously assessed in within **Chapter 19: Landscape and Visual Impact, Volume 2 of the PEIR**.

7.3.3.2 The key differences of LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 in comparison to the PEIR assessment, in terms of landscape and visual effects are as follows:

- Landscape Effects:
 - ▶ 41 Black Ditch Rife LCA: LACR-01a will have a direct effect on this receptor and there will be an increase in the level of effect in comparison to the PEIR which will not be significant. Otherwise, the effects on landscape character will affect different geographical areas of the same receptors but will not alter the overall assessment and conclusions presented in **Tables 19-40 and 19-41** in **Section 19.14, Chapter 19: Landscape and Visual Impact, Volume 2 of the PEIR**.
 - ▶ LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 will significantly affect two of the special landscape qualities of the SDNP. This is because of a reduced impact on settlements such that the special landscape quality No7. Distinctive Towns and Villages will not be significantly affected.
- Visual Effects:
 - ▶ LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 will not significantly affect the views from settlements in comparison to the **PEIR**.
 - ▶ LACR-01a will significantly affect the views from the A284 Lyminster Road and Polling Street in comparison to the **PEIR**.
 - ▶ LACR-01a will significantly affect views from the Brookside Caravan Park, during the winter months, in comparison to the **PEIR**.
 - ▶ LACR-02 will significantly affect views from Clay Lane and Blakehurst Lane in addition to those significant effects assessed in the **PEIR**.
 - ▶ LACR-01c and LACR-02 will significantly affect views from the Monarch's Way and/or South Downs Way in addition to those significant effects assessed in the **PEIR**.
 - ▶ LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 will significantly affect views from parts of a small number of PRoW in addition to the PEIR

assessment which identifies significant effects on a similar number of PRow affecting different geographical areas.

- ▶ LACR-01 (LACR1a and LACR1b) and LACR-02 will affect different geographical areas of the same Open Access Land receptors although the overall assessment and conclusions presented in **Tables 19-40 and 19-41** in **Section 19.14, Chapter 19** of the PEIR will not change.

7.3.3.3 Overall whole project/project wide landscape and visual effects, including cumulative effects will be further assessed in the ES.

7.3.4 Air quality

7.3.4.1 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option result in a change in construction traffic generation. However, due to the temporary and transient nature of construction traffic, no changes are anticipated to the overall assessment outcomes and conclusions (see **Tables G-8 and G-10** in **Appendix G**) of the construction traffic assessments presented in **Sections 20.9 to 20.15** within **Chapter 20: Air quality, Volume 2** of the PEIR.

7.3.4.2 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs), see **Paragraph 7.1.1.1**, introduce a small number of additional residential receptors. However, this will not change the outcome of the construction dust assessment (**Section 20.9**) and overall conclusions (see **Table G-8** in **Appendix G**, noting commitments C-6 and C-24 in **Appendix F** and **Tables 20-22 and 20-26** from **Chapter 20** of the PEIR) provided in **Sections 20.9 to 20.15** within **Chapter 20** of the PEIR.

7.3.4.3 The construction dust assessment, construction traffic and construction plant item modelling will be updated in line with the final ES Assessment Boundary.

7.3.5 Soils and agriculture

7.3.5.1 This section compares the potential effects of the various LACR options under consideration, all of which avoid a section of the PEIR Assessment Boundary i.e., effects on soils/agricultural land will not occur within the relevant section of the PEIR Assessment Boundary if elements of LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and/or LACR-02 are selected. The length of the PEIR Assessment Boundary where effects are avoided will vary depending on the LACR elements selected. As described in **Section 7.1.1**, the possible route combinations are:

- LACR-01a in combination with LACR-01b;
- LACR01a in combination with LACR-01c;
- LACR-02 in combination with LACR-01b; and
- LACR-02 in combination with LACR-01c.

7.3.5.2 The approximate difference in area of land affected by Rampion 2 from the PEIR route to the selected LACR combination is defined for each LACR combination in the paragraphs below.

LACR-01 (LACR-01a and LACR-01b)

7.3.5.3 LACR-01 (LACR-01a and LACR-01b) with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) include for:

- A 195.75ha onshore cable corridor based on a total cable length of 39.15km in a 50m wide corridor;
- 17.80ha of temporary construction compounds (four compounds);
- 0.75ha of trenchless crossing compounds;
- up to 5.90ha for the permanent onshore substation development area, and
- 2.50ha for the onshore substation temporary works area.

7.3.5.4 Therefore, the total area of ground disturbance as a result of LACR-01a and LACR-01b is 222.7ha, which is an increase of 7.6% from the estimate of 206.95ha in **Chapter 21: Soils and agriculture, Volume 2** of the **PEIR**.

7.3.5.5 The assessment at PEIR stage also considers a maximum total area of 5.9ha where there could be permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure. Based on additional design information available since PEIR stage, the area of permanent loss of soil resource and agricultural land due to the selection of LACR-01a and LACR-01b will be 6.51ha. This is based on 5.9ha for the onshore substation, 0.22ha of land for permanent access to the onshore substation, and 0.39ha of fenced off land required for above ground access to joint bays/link boxes (based on 49 fenced areas along 39.15km of onshore cable corridor, typically 80m² each). This is an increase of 9.4% in relation to the permanent loss of agricultural land/soil's food/crop production function. This is worst case, as the area of soil removed will be considerably less than 0.39ha since the joint bays/link box structures will only extend to a few square metres. As the joint bays/link box structures will only extend to a few square metres, most of the soil within the compound will be restored and grassed, maintaining other soil functions.

7.3.5.6 Although the areas of temporary ground disturbance and permanent ground disturbance increase, there is no change to the predicted effects. LACR-01a and LACR-01b potentially encounter more Grade 2 agricultural land (based on the MAFF provisional Agricultural Land Classification Map of England and Wales mapping) than the original PEIR Assessment Boundary. However, the assessment provided in **Sections 21.9 to 21.13** within **Chapter 21** of the **PEIR** assumes that all MAFF Grade 3 agricultural land within PEIR Assessment Boundary is sub-grade 3a (best and most versatile). This assumption, that all agricultural land within PEIR Assessment Boundary is assumed to be Grade 3a (best and most versatile land), still provides a conservative assessment. This takes into consideration of the implementation of the embedded environmental measures (**Appendix F**) to reduce effects on soil and agricultural land caused by temporary construction activities. Therefore, LACR-01a and LACR-01b with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) taken together,

considering the implementation of embedded environmental measures (**Appendix F**), does not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

LACR-01 (LACR-01a and LACR-01c)

- 7.3.5.7 LACR-01 (LACR-01a and LACR-01c) with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) include for:
- A 201.25ha onshore cable corridor based on a total cable length of 40.25km in a 50m wide corridor;
 - 17.80ha of temporary construction compounds (four compounds);
 - 0.75ha of trenchless crossing compounds,
 - up to 5.90ha for the onshore permanent substation development area; and
 - 2.50ha for the onshore substation temporary works area.
- 7.3.5.8 Therefore, the total area of temporary ground disturbance as a result of LACR-01a and LACR-01c is 228.2ha, which is an increase of 10.2% from the estimate of 206.95ha in **Chapter 21** of the **PEIR**.
- 7.3.5.9 The assessment at PEIR stage also considers a maximum total area of 5.9ha where there could be permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure. The area of permanent loss of soil resource and agricultural land due to the selection of LACR-01a and LACR-01c will be 6.52ha. This is based on 5.9ha for the onshore substation, 0.22ha of land for permanent access to the onshore substation, and 0.40ha of fenced off land required for above ground access to joint bays/link boxes (based on 50 fenced areas along 40.15km of onshore cable corridor, typically 80m² each). This is an increase of 9.5% in relation to the permanent loss of agricultural land/soil's food/crop production function. The area of soil removed will be considerably less than 0.40ha, as the joint bays/link box structures will only extend to a few square metres. As the joint bays/link box structures will only extend to a few square metres, most of the soil within the compound will be restored and grassed, maintaining other soil functions.
- 7.3.5.10 Although the areas of temporary ground disturbance and permanent ground disturbance increase, there is no change to the predicted effects. LACR-01a potentially encounters more Grade 2 agricultural land (based on the MAFF provisional Agricultural Land Classification Map of England and Wales mapping) than the original PEIR Assessment Boundary. However, the assessment provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR** assumes that all MAFF Grade 3 agricultural land within PEIR Assessment Boundary is sub-grade 3a (best and most versatile). This assumption, that all agricultural land within PEIR Assessment Boundary is assumed to be Grade 3a (best and most versatile land), still provides a conservative assessment. This takes into consideration the implementation of the embedded environmental measures (**Appendix F**) to reduce effects on soil and agricultural land caused by temporary construction activities. Therefore, LACR-01a and LACR-01c with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) taken together, considering the

implementation of embedded environmental measures (**Appendix F**), does not change the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9** to **21.13** within **Chapter 21** of the **PEIR**.

LACR-02 (LACR-02 and LACR-01b)

7.3.5.11 LACR-02 (LACR-02 and LACR-01b) with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) include for:

- a 177.23ha onshore cable corridor based on a total cable length of 36.6km of which 35.4km is 50m wide through agricultural land, and of which 0.12ha is a narrow corridor (reduced temporary construction corridor width of 20m) through a woodland area 1.2km in length;
- 17.80ha of temporary construction compounds (four compounds);
- 0.75ha of trenchless crossing compounds;
- up to 5.90ha for the onshore permanent substation development area; and
- 2.50ha for the onshore substation temporary works area.

7.3.5.12 Therefore, the total area of temporary ground disturbance as a result of LACR-02 and LACR-01b is 204.18ha, which is a reduction of 1.3% from the estimate of 206.95ha in **Chapter 21** of the **PEIR**.

7.3.5.13 The assessment at PEIR stage also considered a maximum total area of 5.9ha where there could be permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure. The area of permanent loss of soil resource and agricultural land due to the selection of LACR-02 and LACR-01b will be 6.49ha. This is based on 5.9ha for the onshore substation, 0.22ha of land for permanent access to the onshore substation, and 0.37ha of fenced off land required for above ground access to joint bays/link boxes (based on 46 fenced areas along 36.6km of onshore cable corridor, typically 80m² each).

7.3.5.14 Additionally, LACR-02 introduces a new receptor comprising woodland soils, and due to the removal of woodland which cannot be reinstated, this increases the area where soils are lost or significantly degraded by 1.11ha. The compensation areas associated with LACR-02 cover 11.0ha of land of which approximately 7.4ha is currently shown as provisional Grade 3 ALC agricultural land and where the current agricultural biomass production function of the soils would be lost due to their replacement with undesignated woodland.

7.3.5.15 The total area, 15.0ha (6.49ha plus 1.11ha plus 7.4ha), is an increase of 154.2% from the PEIR of permanent soil disturbance, comprising of the permanent loss of agricultural land/soil, loss of woodland soil and degradation of agricultural soil (assumed BMV land) by its replacement with undesignated permanent woodland. The area of soil removed for the joint bays/link boxes is worst case, as it will be considerably less than 0.34ha due to the joint bays/link box structures only extending to a few square metres. As the joint bays/link box structures will only extend to a few square metres, most of the soil within the compound will be restored and grassed, maintaining other soil functions.

7.3.5.16 Although the area of temporary ground disturbance decreases, there is no change to the predicted temporary effects for agricultural soils. LACR-01b potentially

encounters more Grade 2 agricultural land (based on the MAFF provisional Agricultural Land Classification Map of England and Wales mapping) than the original PEIR Assessment Boundary. However, the assessment provided in **Sections 21.9 to 21.13** within **Chapter 21** of the **PEIR** assumes that all MAFF Grade 3 agricultural land within PEIR Assessment Boundary is sub-grade 3a (best and most versatile) and this assumption, that all agricultural land within PEIR Assessment Boundary is assumed to be Grade 3a (best and most versatile land) is still likely to provide a conservative assessment. This takes into consideration the implementation of the embedded environmental measures (**Appendix F**) to reduce effects on soil and agricultural land caused by temporary construction activities. Therefore, for LACR-02 and LACR-01b with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) taken together, considering the implementation of embedded environmental measures (**Appendix F**), the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9 to 21.13** within **Chapter 21** of the **PEIR** are still applicable for agricultural land in relation to temporary effects. However, there is a new effect on woodland soils, as described below.

- 7.3.5.17 LACR-02 introduces a new receptor (woodland soils) and likely effect on this receptor. Woodland soils were not an identified receptor in the **PEIR**. The effect on woodland soils is a **minor adverse (Not Significant) effect** as a result of LACR-02. Land used for compensation of the loss of woodland is not currently considered in the updated assessment as based on available information ground/soil disturbance would be minimised, however this will be considered further in the ES.
- 7.3.5.18 Based on the assumption that the areas of land identified for compensation measures are BMV land (Grade 3a) and that permanent degradation of the agricultural land would occur due to the loss of the soil's biomass function, the magnitude of change is low, and the significance of the effect is **moderate adverse (Potentially Significant)**. This is an increase from 5.9ha (as per original **PEIR**) to 15.0ha of permanent loss of assumed Grade 3a BMV agricultural land, resulting in a **moderate adverse (Potentially Significant)** effect. The embedded environmental measures for soils will be updated in the ES to include survey of soils and identifications of ALC grades within the affected woodland area and the three compensation areas to inform soil management planning. The ALC survey information will inform the final updated ES assessment and conclusions on significance.

LACR-02 (LACR-02 and LACR-01c)

- 7.3.5.19 LACR-02 (LACR-02 and LACR-01c) with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) include for:

- A 189.63ha onshore cable corridor based on a total cable length of 39.1km of which 37.9km is 50m wide through agricultural land, and 0.12ha is a narrow corridor (reduced temporary construction corridor width of 20m) through a woodland area of 1.2km in length;
- 17.80ha of temporary construction compounds (four compounds);
- 0.75ha of trenchless crossing compounds,

- up to 5.90ha for the onshore permanent substation development area; and
- 2.50ha for the onshore substation temporary works area.

- 7.3.5.20 Therefore, the total area of temporary ground disturbance as a result of LACR-02 and LACR-01b is 216.59ha, which is an increase of 4.6% from the estimate of 206.95ha in **Chapter 21 of the PEIR**.
- 7.3.5.21 The assessment at PEIR stage also considered a maximum total area of 5.9ha where there could be permanent loss of soil resource and agricultural land due to construction of the onshore substation infrastructure. The area of permanent loss of soil resource and agricultural land due to the selection of LACR-02 and LACR-01b will be 6.51ha. This is based on 5.9ha for the onshore substation, 0.22ha of land for permanent access to the onshore substation, and 0.39ha of fenced off land required for above ground access to joint bays/link boxes (based on 49 fenced areas along 39.1km of onshore cable corridor, typically 80m² each).
- 7.3.5.22 Additionally, LACR-02 introduces a new receptor comprising woodland soils, and due to the removal of woodland which cannot be reinstated, this increases the area where soils are lost or significantly degraded by 1.11ha.
- 7.3.5.23 The compensation areas associated with LACR-02 cover 11.0ha of land of which approximately 7.4ha is currently shown as provisional Grade 3 ALC agricultural land and where the current agricultural biomass production function of the soils would be lost due to their replacement with undesignated woodland.
- 7.3.5.24 The total area, 15.0ha (6.51ha plus 1.11ha plus 7.4ha), This is an increase of 154.6% of permanent soil disturbance, comprising of the permanent loss of agricultural land/soil's food/crop production function, loss of woodland soil and degradation of agricultural soil (assumed BMV land) by its replacement with undesignated permanent woodland. The area of soil removed for the joint bays/link boxes will be considerably less than 0.37ha, as the joint bays/link box structures will only extend to a few square metres. As the joint bays/link box structures will only extend to a few square metres, most of the soil within the compound will be restored and grassed, maintaining other soil functions.
- 7.3.5.25 Although the areas of temporary ground disturbance and permanent ground disturbance increase, there is no change to the predicted effects for agricultural soils in relation to temporary effects. The assessment provided in **Sections 21.9 to 21.13** within **Chapter 21 of the PEIR** assumes that all MAFF Grade 3 agricultural land within PEIR Assessment Boundary is sub-grade 3a (best and most versatile) and this assumption, that all agricultural land within PEIR Assessment Boundary is assumed to be Grade 3a (best and most versatile land) is still likely to provide a conservative assessment for LACR-02 (LACR-02 and LACR-01c. This takes into consideration the implementation of the embedded environmental measures (**Appendix F**) to reduce effects on soil and agricultural land caused by temporary construction activities. Therefore, for LACR-02 and LACR-01b with relevant alternatives and modifications (ACRs, MRs, AAs and TCs) taken together, considering the implementation of embedded environmental measures (**Appendix F**), the overall assessment outcomes and conclusions (see **Table G-9** in **Appendix G**) provided in **Sections 21.9 to 21.13** within **Chapter 21** of the **PEIR** are still applicable for agricultural land in relation to temporary effects. However, there is a new effect on woodland soils, as described below.

- 7.3.5.26 LACR-02 introduces a new receptor (woodland soils) and likely effect on this receptor. Woodland soils were not an identified receptor in the PEIR. The effect on woodland soils is **minor adverse (Not Significant) effect** as a result of LACR-02. Land used for compensation of the loss of woodland is not currently considered in the updated assessment as based on available information ground/soil disturbance would be minimised, however this will be considered further in the ES.
- 7.3.5.27 Based on the assumption that the areas of land identified for compensation measures are BMV land (Grade 3a) and that permanent degradation of the agricultural land would occur due to the loss of the soil's biomass function, the magnitude of change is low, and the significance of the effect is **moderate adverse (Potentially Significant)**. This is an increase from 5.9ha (as per original PEIR) to 15.0ha of permanent loss of assumed Grade 3a BMV agricultural land, resulting in a **moderate adverse (Potentially Significant)** effect. The embedded environmental measures for soils will be updated in the ES to include survey of soils and identification of ALC grades within the affected woodland area and the three compensation areas to inform soil management planning. The ALC survey information will inform the final updated ES assessment and conclusions on significance.

7.3.6 Noise and vibration (onshore)

- 7.3.6.1 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, result in a change in construction traffic generation. However, the predicted change in construction traffic flow changes are minimal and consequently, there is no change anticipated to the noise assessments of construction traffic across LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) taken together. Therefore, there is also no anticipated change to the assessment outcomes and conclusions (see **Tables G-8 and G-10** in **Appendix G**) of the construction traffic assessments presented in **Section 22.9** within **Chapter 22: Noise and vibration (onshore), Volume 2** of the PEIR.
- 7.3.6.2 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option introduce new receptors for the noise and vibration assessment. However, based on the assessment approach undertaken at PEIR stage and the embedded environmental measures outlined, LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option taken together do not change the overall conclusions of the noise and vibration assessment as per **Section 22.9** within **Chapter 22** of the PEIR.

7.3.7 Terrestrial ecology and nature conservation

- 7.3.7.1 The terrestrial ecology assessment within **Chapter 23: Terrestrial ecology, Volume 2** of the PEIR considered each ecological feature across the entire onshore cable corridor and onshore substation search area (including the options present). The potential for LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) or LACR-02 to alter the outcome of the assessment, has also been considered at the

same scale (i.e. in light of information on ecological features and the Proposed Development between landfall and connection point). Since the publication of PEIR, additional embedded environmental measures have been determined (see **Appendix I**) that will reduce the overall levels of effect on a variety of ecological features; however until a single design is available and further detail on implementation is understood no previously identified **Significant** effects have been downgraded at this stage. The exception is with regards the Warningcamp Hill to New Down LWS which is avoided by both LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02, resulting in these routes removing an identified **Significant** effect.

- 7.3.7.2 LACR-02 does result in the identification of an additional **Significant** effect on an ecological feature (namely ancient woodland) and therefore the outcomes in **Table G-11 in Appendix G** would be updated in the application should LACR-02 be the preferred option.
- 7.3.7.3 As the design becomes finalised prior to the DCO Application, the opportunity to understand more fully the realistic worst-case scenario (including new and updated embedded environmental measures) there will be potential for some of the significant effects identified at PEIR stage to be revised to **Not Significant** for the Proposed Development. Additionally, the effects of fragmentation can be better understood and assessed across the Proposed Development.

7.3.8 Transport

- 7.3.8.1 LACR-01 (LACR-01a, LACR-01b and/or LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option will result in a change in construction traffic numbers to those assessed within **Chapter 24: Transport, Volume 2 of the PEIR**. Following the introduction of LACR-01 and LACR-02, LACR-01 options LACR-01a and LACR-01c are considered to be the revised maximum design scenario which is further detailed in **Appendix J**. It is considered that the construction traffic generation impacts for other alternative route options including LACR-01 (LACR-01a and LACR-1b) and LACR-02 will be less than the new revised maximum design scenario and therefore fall within the assessment of the maximum design scenario for LACR-01a and LACR-01c. The impacts of LACR-01 (LACR-01a and LACR-1c) are assessed in detail in **Appendix J**.
- 7.3.8.2 **Appendix J** identifies four highways links requiring consideration in the assessment of effects in line with GEART (IEA, 1993). The assessment of effects provided in **Appendix J** concludes for all four highway links that, following the implementation of embedded environmental measures² (see **Appendix F**), the significance of residual effects is negligible which is **Not Significant** in EIA terms. A summary of residual effects table for the four highway links is provided in **Section 8 of Appendix J**. This is considered alongside the remaining overall assessment outcomes and conclusions (see **Table G-12 in Appendix G**) provided in the **Sections 24.10 to 24.15** within **Chapter 24 of the PEIR** which are unchanged and remain valid. A fully detailed transport environmental assessment will be completed at the ES stage considering the final ES Assessment Boundary.

7.3.9 Ground conditions

7.3.9.1 LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, considering the implementation of embedded environmental measures (**Appendix F**), do not change to the assessment outcomes and conclusions (see **Table G-13** in **Appendix G**) provided in **Sections 25.9** to **25.15** within **Chapter 25: Ground conditions, Volume 2** of the **PEIR**.

7.3.10 Historic environment

7.3.10.1 The historic environment assessment within the **PEIR** (RED, 2021) considered potential effects on historic environment receptors in **Chapter 26: Historic environment, Volume 2** of the **PEIR**. **Sections 2** to **6** (with **Appendix K part 3**) of the **PEIR SIR** evaluate whether LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 and the proposed alternatives and modifications (ACRs, MRs, AAs and TCs) will result in changes to the assessment outcomes and conclusions of the **PEIR**. The LACRs, along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, have the potential to introduce new receptors (designated and non-designated heritage assets) not identified at **PEIR** Stage and to change to the assessment outcomes and conclusions of the **PEIR** (as detailed within **Sections 2-6**). Where the different combination of LACRs, ACRs, MRs, AAs and TCs options are taken together in the final design stage, the historic environment effects identified in the **PEIR SIR**, will be considered cumulative. Further surveys will be required to understand the presence and significance of as yet unknown archaeological remains within the LACRs and the relevant alternatives and modifications (ACRs, MRs, AAs and TCs). Overall, considering the implementation of embedded environmental measures (**Appendix F**), where new receptors or changes to magnitude of effects on known receptors have been identified, the residual effects are comparable to those identified in **Sections 2.3** and **2.4** and **Section 26.15** within **Chapter 26** of the **PEIR**. A detailed baseline and the overall assessment for historic environment receptors will be undertaken in full at the ES stage.

7.3.11 Water environment

7.3.11.1 The water environment assessment within the **PEIR** (RED, 2021) considered potential effects on a range of individual receptors which were identified across the onshore cable corridor in **Section 27.9** to **Section 27.11** within **Chapter 27: Water environment, Volume 2** of the **PEIR**. There were various new environmental receptors identified at LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02. **Sections 2.3** to **2.4** evaluate whether there will be any changes to the assessment outcomes and conclusions of the **PEIR** due the proposed LACRs. **Sections 2.3** and **2.4** outline that there could be a potential change to the assessment outcomes and conclusions associated with LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02. This relates to assessment outcomes towards the underlying aquifer, public water supplies and private water supplies which will need to be subject to further investigation at the ES stage, via the implementation of a detailed hydrological risk assessment.

7.3.11.2 For all other alternatives and modifications, there has been no change to the environmental receptors or overall assessment outcomes reported on the basis of changes being limited in their nature and extent in comparison to the original PEIR proposals. As such it is considered unlikely that, as a result of LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs), see **Paragraph 7.1.1.1**, there will be a change to the overall preliminary assessment (see **Tables G-15 to G-21 in Appendix G**) in **Section 27.12 to 27.14 of Chapter 27: Water environment, Volume 2 of the PEIR**. The overall project wide water environment effects will be revisited and assessed further in the ES. The assessment in the ES will be carried out for a chosen ES Assessment Boundary, once there has been a reduction in route optionality.

7.3.12 Major accidents and disasters

7.3.12.1 In relation to major accidents and disasters, LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, are largely comparable to the original PEIR Assessment Boundary. It does not run through the consultation distances of any new Control of Major Accident Hazard (COMAH) facilities, nor does it introduce any significant new hazards or receptor populations. Therefore, LACR-01 and LACR-02 do not significantly alter the baseline, environmental receptors or the overall outcomes and conclusions presented in **Sections 28.6 to 28.11 within Chapter 28: Major accidents and disasters, Volume 2 of the PEIR**.

7.3.13 Greenhouse gas assessment

7.3.13.1 LACR-01 (LACR-01a, LACR-01b and LACR-01c) and LACR-02 along with the relevant alternatives and modifications (ACRs, MRs, AAs and TCs) per option, see **Paragraph 7.1.1.1**, taken together do not change the baseline, environmental receptors or the overall assessment outcomes and conclusions presented in **Appendix 5.2: Greenhouse gas assessment, Volume 4 of the PEIR**.

8. Summary

- 8.1.1.1 This section summarises the conclusions of the high-level environmental review of proposed alternatives and modifications (LACRs, ACRs, MRs, AAs and TCs).
- 8.1.1.2 LACR-01a, LACR-01b and LACR-01c (**Section 2.3**) will introduce additional sensitive receptors which include the aspects socio economics, landscape and visual impact, noise and vibration, transport, air quality, historic environment and terrestrial ecology, as described in the relevant LACR section. Some changes in the magnitude of effect to sensitive receptors will be experienced for LACR-01a, LACR-01b and LACR-01c and are noted in the relevant aspect sections. Considering the implementation of embedded environmental measures (**Appendix F**), new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the **PEIR** (RED, 2021) for socio economics (LACR-01c only), water environment and landscape and visual impact. The landscape and visual impact significant residual effects are likely to be for a temporary period.
- 8.1.1.3 LACR-02 (**Section 2.4**) will introduce additional sensitive receptors which include the aspects socio economics, landscape and visual impact, noise and vibration, transport, air quality, soils and agriculture, historic environment and terrestrial ecology, as described in the relevant LACR section. Some changes in the magnitude of impact to sensitive receptors will be experienced for LACR-02 and are noted in the relevant aspect sections. Considering the implementation of embedded environmental measures (**Appendix F**), new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the **PEIR** (RED, 2021) for socio economics, water environment, landscape and visual impact, soils and agriculture and terrestrial ecology. The landscape and visual impact significant residual effects are likely to be for a temporary period.
- 8.1.1.4 ACR-04 (**Section 3.6**) will introduce additional sensitive receptors, with some changes in the magnitude of impact to sensitive receptors experienced by soils and agriculture, terrestrial ecology and nature conservation, and water environment receptors. Considering the implementation of embedded environmental measures (**Appendix F**), new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the **PEIR** (RED, 2021) for water environment.
- 8.1.1.5 ACR-02 (**Section 3.4**), ACR-03 (**Section 3.5**), ACR-06 (**Section 3.8**), and ACR-07 (**Section 3.9**) will introduce additional sensitive receptors which, between them, include the aspects socio economics, landscape and visual impact, noise and vibration, transport, air quality, historic environment and terrestrial ecology, as described in the relevant ACR section. Some changes in the magnitude of impact to sensitive receptors will be experienced for these ACRs and are noted in the relevant sections. For each, however, considering the implementation of embedded environmental measures (**Appendix F**), no new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the **PEIR**.

- 8.1.1.6 In regards to ACR-01 (**Section 3.3**) and ACR-05 (**Section 3.7**), no sensitive receptors have been introduced. Considering the implementation of embedded environmental measures (**Appendix F**), no new or different significant residual effects have been identified which alter the assessment outcomes and conclusions presented in the **PEIR**.
- 8.1.1.7 The Modified Routes (MR-01 to MR-11) (**Section 4.2**), considering the implementation of embedded environmental measures (**Appendix F**), do not change the overall assessment outcomes and conclusions outlined across the **Chapters 18-28, Volume 2 of the PEIR**.
- 8.1.1.8 The new and/or amended trenchless crossings (TC-01-TC-21) (**Section 5.2**), do not change the overall assessment outcomes and conclusions outlined across the **Chapters 18-28, Volume 2 of the PEIR**. Note that the TCs associated with LACRs and ACRs have been considered and assessed as part of the relevant LACRs and ACRs sections as noted above.
- 8.1.1.9 In regards to the alternative temporary construction and permanent accesses (AA-01 to AA-15) (**Section 6.2**), the following summarises the aspect environmental reviews. For alternative temporary construction access AA-04, a change to the setting of the Lyminster Conservation Area and Church Farmhouse (1276284) has been identified. However, the assessment of residual effects on these designated heritage assets will be **Not Significant** in EIA terms. The assessment of designated heritage assets will be updated in line with the ES Assessment Boundary in the historic environment chapter presented in the ES.
- 8.1.1.10 For alternative temporary construction and permanent access AA-08, the additional receptors assessed for the landscape and visual impact will potentially lead to **Significant** effects for a temporary period in the upper part of the valley. This will change the overall assessment conclusions (see **Tables G-2 – G-8** in **Appendix G**) presented in **Sections 19.9 to 19.14** within **Chapter 19** of the **PEIR**.
- 8.1.1.11 There is an additional ecological receptor assessed within AA-08. The receptor is an area of marshy grassland that lies between areas of Ancient Woodland and is adjacent to the Warningcamp Hill and New Down LWS. Given the extent and connectedness of this habitat, AA-08 results in this ecological feature being scoped into the assessment. However, the effects will be small in scale and temporary, suggesting a conclusion of no significant effects and no change to overall assessment conclusions presented in **Sections 18.9 to 18.15** within **Chapter 23** of the **PEIR**.
- 8.1.1.12 Alternative temporary construction access AA-09, has the potential to further impact bridleway 2260, which is a receptor already identified and assessed at PEIR. This could affect access to and enjoyment of onshore recreation activity. However, together with a co-terminus alternative route is available via bridleways 2173 and 2209 and embedded mitigation measures (**Appendix F**), AA-09 will not lead to additional significant residual effects presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.
- 8.1.1.13 AA-09 introduces new known receptors additional to those identified at PEIR stage, including a scheduled monument and Archaeological Notification Area (ANA). Given the limited extent of works required and the anticipated construction depth of AA-09 in relation to the extent of the known and potential archaeological

assets, a low to medium magnitude of change is likely. This could lead to potentially significant adverse effects, which will be permanent. However, further information obtained by field investigations and implementation of embedded environmental measures (C-79, C-80 and C-81 in **Appendix F**) will seek to limit the magnitude and overall effect on archaeological receptors to an acceptable level being low to medium adverse, which will be **Not Significant** in EIA terms. AA-09 passes within 120m of Michelgrove Cottages (1217075) and 170m of the Ruins of Michelgrove (1353888) and is considered likely to introduce a very low magnitude of change resulting in a minor adverse effect, which will be **Not Significant** in EIA terms.

- 8.1.1.14 Alternative temporary construction access AA-10 has the potential to further impact restricted byway (RB) 2092, which is a receptor already identified and assessed at PEIR. This could affect access to and enjoyment of onshore recreation activity. However, together with an alternative route via bridleway 2260 or bridleway 2173 and embedded environmental measures (**Appendix F**), AA-10 will not lead to additional significant residual effects presented in **Sections 18.9 to 18.15** within **Chapter 18** of the **PEIR**.
- 8.1.1.15 The overall review for each environmental aspect of all the alternatives and modifications (comprising Longer Alternative Cable Routes, Alternative Cable Routes, Modified Routes, alternative temporary construction and permanent accesses and revised and/or additional trenchless crossings) together in **Section 7** identifies no changes to the overall assessment and conclusions outlined across the **Chapters 18-28, Volume 2** of the **PEIR**. As the design becomes finalised prior to the DCO Application, further update and refinement of the maximum design scenario and embedded environmental measures will inform the environmental assessments presented in the ES.

9. Glossary of terms and abbreviations

Table 9-1 Glossary of terms and abbreviations

Term	Definition
Alternative Access (AA)	Alternative Accesses (AAs) are onshore part of the original PEIR Assessment Boundary amendments and represent the location of the additional temporary construction and permanent accesses.
Alternative Cable Route (ACR)	Alternative Cable Routes (ACRs) are areas that deviate geographically from the onshore part of the original PEIR Assessment Boundary to enable an additional onshore cable corridor option to be considered by RED. Due to the extent of the geographical deviation these additional areas are considered more likely to include new environmental receptors and/or the potential to change the resulting assessment outcomes and conclusions presented at PEIR stage.
Agricultural Land Classification (ALC)	ALC categorises land into five different grades based on the extent to which physical or chemical characteristics inflict long term limitations on an agricultural site.
ALC Grade 1	Land within this grade has little to no limitations to agricultural use. This land can support a very wide range of agricultural and horticultural crops including top fruit, soft fruit salad crops and winter harvested vegetables. Yields are consistently high
ALC Grade 2	Grade 2 indicates very good quality agricultural land with only minor limitations that affect crop yield, cultivations or harvesting and potential to grow a wide range of agricultural and horticultural crops. The level of yield is generally high but may be lower or more variable than Grade 1.
ALC Grade 3	The Grade 3 ALC classification indicates good to moderate agricultural land, meaning land with moderate limitations affecting choice of crops, timing, type of cultivation, harvesting and level of yield. Grade 3 land is divided into two subgrades designated as 3a and 3b. Grade 3a (good quality agricultural land) is defined as best and most versatile (BMV) land, while Grade 3b (moderate quality agricultural land) is not BMV.

Term	Definition
ALC Grade 4	Grade 4 indicates poor quality agricultural land, meaning land with severe limitations on the range of viable crops and level of yields, which is mainly suited to grass with occasional arable crops such as cereals and forage crops. Grade 4 can also include arable land that is very dry because of drought.
ALC Grade 5	Grade 5 land has severe limitations which restricts use to permanent pasture or rough grazing, except for occasional pioneer forage crops.
Air Quality Management Area (AQMA)	The term AQMA refers to an Air Quality Management Area.
Archaeological Notification Area (ANA)	Archaeological Notification Areas (ANAs) are areas where there is evidence of archaeological remains.
At-Grade	On the same level, for example when a railway line is on the current ground level.
Best and Most Versatile (BMV)	The term BMV refers to the Best and Most Versatile agricultural land value from a soils and agriculture perspective.
Cable stringing out area	Used for storage, laying out and welding of onshore cable sections, with associated construction vehicle movements. These are non-intrusive works (i.e. there will be no breaking of ground in these areas).
Construction Traffic Management Plan (CTMP)	The Construction Traffic Management Plan (CTMP) which will be provided alongside the DCO application.
Development Consent Order (DCO)	This is the means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects, under the Planning Act 2008.
Development Consent Order (DCO) Application	An application for development consent to undertake a Nationally Significant Infrastructure Project, under the Planning Act 2008, made to the Planning Inspectorate. The Planning Inspectorate will consider the application and make a recommendation to the Secretary of State for Business, Energy, and Industrial Strategy, who will decide on whether development consent should be granted for the Proposed Development.
Environmental Impact Assessment (EIA)	The process of evaluating the likely significant environmental effects of a proposed project or development over and above the existing circumstances (or 'baseline').

Term	Definition
Environmental measures	Measures which are proposed to prevent, reduce and where possible offset any significant adverse effects (or to avoid, reduce and if possible, remedy identified effects).
Environmental Statement (ES)	The written output presenting the full findings of the Environmental Impact Assessment.
Habitat of Principal Importance (HPI)	The term HPI refers to a Habitat of Principal Importance which relates to an ecological designation for an area.
Hydrological Risk Assessment (HRA)	Hydrogeological Risk Assessment (HRA) to support the Water environment chapter in support of the ES.
Historic Environment Record (HER)	The term HER refers to Historic Environment Record which relates to unknown historic finds and features.
Horizontal Directional Drill (HDD)	Horizontal Directional Drill (HDD) is a process whereby a tunnel is drilled under an obstacle and a cable duct is pulled through the drilled underground tunnel. It avoids the need for trenches, and enables minimal disruption to routing cables through rivers, roads, drains and other obstacles.
HDD Compound	Used to encompass all the HDD equipment/welfare facilities, entry pit excavation (& soil storage), removal of drilled soil and storage of drilling fluids. Construction materials and plant associated with the construction of the Horizontal Drilling (HDD) at landfall, such as cable and ducting.
Institute of Air Quality Management (IAQM)	The Institute of Air Quality Management (IAQM) was launched in November 2002 to provide a focal point for all air quality professionals The IAQM is the largest professional body for air quality experts in the UK.
Locally Important Geological Site (LIGS)	Locally Important Geological Sites (LIGS) are equivalent to Sites of Borough or Local Importance for Nature Conservation, Geology, Geomorphology and accorded equivalent protection.
Local Wildlife Site (LWS)	Local Wildlife Sites are non-statutory designations conferred by local planning authorities and given weight through local planning policy. These sites are selected through a selection of criteria (criteria are area dependent) aimed at identifying “substantive nature conservation value”.

Term	Definition
Longer Alternative Cable Route (LACR)	These are areas that deviate geographically from the onshore part of the original PEIR Assessment Boundary, to enable an alternative onshore cable corridor option to be considered by RED and are both over 13km in length.
Ministry of Agriculture Fisheries and Food (MAFF)	The former Ministry of Agriculture, Fisheries and Food (MAFF) was a United Kingdom government department created by the Board of Agriculture Act 1889, now Department for Environment, Food & Rural Affairs (Defra).
Modified Route (MR)	The Modified Routes (MRs) include new areas directly adjacent to the onshore part of the original PEIR Assessment Boundary. These are being proposed to facilitate flexibility in the design of the onshore cable corridor at specific locations in order to accommodate cable realignments, or widened working areas (i.e., for laying out equipment) or soil storage.
Nationally Significant Infrastructure Project (NSIP)	Nationally Significant Infrastructure Projects (NSIPs), under the Planning Act 2008, are major infrastructure developments in England and Wales which are consented by DCO. These include proposals for offshore wind farms with an installed capacity greater than 100MW.
PEIR Assessment Boundary	The PEIR Assessment Boundary combines the search areas for the offshore and onshore infrastructure associated with the Proposed Development at the PEIR stage. It is defined as the area within which the Proposed Development and associated infrastructure will be located, including the temporary and permanent construction and operational work areas.
Preliminary Environmental Information Report (PEIR)	The Preliminary Environmental Information Report (PEIR) is the written output of the Environmental Impact Assessment undertaken to date for the Proposed Development. It is developed to support formal consultation. The PEIR presents the preliminary findings of the assessment to allow an informed view to be developed of the Proposed Development. The PEIR provides an overview of the assessment approach that has been undertaken, along with the preliminary conclusions on the likely significant effects of the Proposed Development and environmental measures proposed.

Term	Definition
PEIR Supplementary Information Report (SIR)	The original Rampion 2 PEIR (RED, 2021) was published in July 2021 in support of Section 42 consultation under the Planning Act 2008.
Private Water Supply (PWS)	The PEIR Supplementary Information Report (SIR) identifies and provides additional supporting preliminary environmental information associated with proposed alternatives and modifications to the onshore part of the original PEIR Assessment Boundary which have been identified since the publication of the original PEIR (RED, 2021) in July 2021.
Public Rights of Way (PRoW)	PWS refers to Private water supply” or “private supply of water” meaning a supply of water other than a supply provided directly by a water undertaker ⁽²⁾ or licensed water supplier ⁽³⁾ , and which is comprised of all physical assets from the point of abstraction to the point of use, including associated pipes, fittings and tanks.
outline Public Rights of Way Management Plan (PRoWMP)	PRoW refers to Public Rights of Way.
Rampion 1	The outline Public Rights of Way Management Plan (PRoWMP) is a document which will be provided alongside the DCO application.
RED	The existing Rampion Offshore Wind Farm located in the English Channel in off the south coast of England.
Soil Storage Compound	Rampion Extension Development Limited
South Downs National Park Authority (SDNPA)	Used to store topsoil graded from the easement prior to construction works.
Site of Specific Scientific Interest (SSSI)	The term SDNPA refers to the South Downs National Park Authority.
Special Area of Conservation (SAC)	A Site of Special Scientific Interest (SSSI) is a formal conservation designation. Usually, it describes an area that is of particular interest to science due to the rare species of fauna or flora it contains - or even important geological or physiological features that may lie in its boundaries.
	International designation implemented under the Habitats Regulations for the protection of habitats and (non-bird) species. Sites designated to protect habitats and species on Annexes I and II of the Habitats Directive. Sufficient habitat to maintain favourable

Term	Definition
	conservation status of the particular feature in each member state needs to be identified and designated.
Special Protection Area (SPA)	Sites designated under EU Directive (79/409/EEC) to protect habitats of migratory birds and certain threatened birds under the Birds Directive (The Conservation of Habitats and Species Regulations 2017)
Statutory Consultation	Statutory consultation is consultation required under Section 42 and Section 47 of the Planning Act 2008 with the relevant consultation bodies and the public on the preliminary environmental information.
The Proposed Development/Rampion 2	Rampion Extension Development Limited (RED) is developing the Rampion 2 Offshore Wind Farm Project (Rampion 2) located adjacent to the existing Rampion Offshore Wind Farm Project ('Rampion 1') in the English Channel in the south of England. Rampion 2 comprises of both onshore and offshore infrastructure associated with the proposed offshore wind farm.
Trenchless Crossing (TC)	Trenchless crossing (TC) is when the cable duct is drilled or bored under a constraint(s). As part of the onshore cable route, trenchless crossing methods will be used under some constraints (e.g. main watercourses, railways, roads that form part of the Strategic Highways Network and other identified constraints).
Trenchless Crossing Compound	Trenchless crossing compounds encompass all the trenchless equipment/welfare facilities associated with the construction of trenchless crossings such as construction materials and plant associated with the construction i.e. cable and ducting (as required). This area includes entry pit excavations and storage of drilling fluids (as required).
Water Framework Directive (WFD)	The Water Framework Directive (WFD) is referred to in legislation as Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy.
WTG	Wind turbine generators

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Appendix A

Figures (SIR Plans)

Appendix B

Statutory and non-statutory environmental designations and other key environmental features

Appendix C Review summary for Longer Alternative Cable Routes (LACRs) and Alternative Cable Routes (ACRs)

Green Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there is <u>no change</u> to overall assessment outcomes and/or conclusions presented in the PEIR (RED 2021).</p> <p>Text is provided to clarify where appropriate, including notable changes to environmental receptors since PEIR where relevant</p>
Orange Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential increase</u> in the overall assessment of significance presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>
White Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential reduction</u> in the overall assessment of effects presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>

Table C1 Review of Longer Alternative Cable Routes

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
Socio-economics	Additional receptors include users of PRowS are detailed in Table M-2 in Appendix M .	Additional receptors include users of PRowS are detailed in Table M-2 in Appendix M .	Additional receptors include users of PRowS are detailed in Table M-2 in Appendix M . Moderate/major adverse effect (Significant) on users of restricted byway 2092.	Additional receptors include users of PRowS are detailed in Table M-2 in Appendix M . Moderate adverse effect (Significant) on users of bridleway 2189_1 Major adverse effect (Significant) on users of bridleway 2211 Moderate adverse effect (Significant) on users of the southern section of bridleway 2192_2 Moderate/major adverse effect (Significant) on users of bridleway 2175 Minor/moderate adverse effect (Significant) on users of bridleway 3558_1
Landscape and visual	Route passes through six Landscape Character Area (LCAs) and the	Route passes through one LCA within the SDNP.	Route passes through two LCAs and the SDNP.	Route passes through four LCAs and the South Downs National Park (SDNP).

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>South Downs National Park (SDNP).</p> <p>A significant adverse effect on the following landscape receptors:</p> <ul style="list-style-type: none"> • R1: South Downs Upper Coastal Plain LCA; • B4: Angmering and Clapham Wooded Estate Downland LCA; and • A3: Arun to Adur Open Downs LCA. 	<p>A significant adverse effect on landscape receptor A3: Arun to Adur Open Downs LCA.</p>	<p>A significant adverse effect on landscape receptor A3: Arun to Adur Open Downs LCA.</p>	<p>Significant adverse effect on the following landscape receptors:</p> <ul style="list-style-type: none"> • G4: Arun Valley Sides; • R1: South Downs Upper Coastal Plain; • B4: Angmering and Clapham Wooded Estate Downland; and • A3: Arun to Adur Open Downs.
	<p>Crosses approximately seven treebelts/hedgerows with trees/hedges or field boundaries.</p>	<p>Crosses approximately five treebelts/hedgerows with trees/hedges or field boundaries</p>	<p>Crosses approximately 18 treebelts/hedgerows with trees/hedges or field boundaries.</p>	<p>Crosses approximately seven treebelts/hedgerows with trees/hedges or field boundaries.</p>
	<p>Significant adverse visual effects from some individual residential properties on the southern edge of Lyminster.</p>	<p>Significant adverse visual effects during the construction phase:</p>	<p>Significant adverse visual effects during the construction phase:</p> <ul style="list-style-type: none"> • Views from part of the Monarch's Way which overlaps with 	<p>Significant adverse visual effects from some individual residential properties on the eastern edge of Warningcamp along Clay Lane.</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>Significant adverse visual effects during the construction phase:</p> <ul style="list-style-type: none"> • A284 Lyminster Road and Polling Street • Views from Brookside Caravan Park • Bridleways: 2208/1, 2260, 2209, 2192/2 and 2191/2; • Footpaths: 3096, 2156, 2201, 2188, 2187, 2188/1, and 2208/2; and • Open Access Land at Barpham Hill. 	<ul style="list-style-type: none"> • Bridleways: 2175, 2191/2, 2209, 2252, 2173 and 2282/1; • Footpaths: 2208/2; and • Open Access Land at Barpham Hill and near Harrow Hill. 	<p>Bridleway 2264, 2211 and 2091 and from part of the South Down's Way which overlaps with Bridleway 2673 and 2092; and</p> <ul style="list-style-type: none"> • Bridleways: 2208/1, 2209, 2282/1, 2264, 2106, 2108, 2109, 2282, 2108/1 and 2688; and • Footpaths: 2208/2. 	<p>Significant adverse visual effects during the construction phase:</p> <ul style="list-style-type: none"> • Views from transport routes: Clay Lane and Blakehurst Lane. • Views from part of the Monarch's Way which overlaps with Bridleway 2211. • Bridleways: 2212, 2221, 2191/2, 2260 and 2208/1. • Footpaths: 2226, 2256 and 2208/2; and • Open Access Land at Barpham Hill.
Air quality	Residential receptors identified within 350m of LACR-01a, including receptors within the villages of Hammerpot, Patching and Michelgrove, farms along	Three isolated farms have been identified within 350m of LACR-01b.	Five isolated farms have been identified within 350m of LACR-01c. Additional sensitive receptors within 20m for	Residential receptors identified within 350m of LACR-02 including receptors within the village of Hammerpot, farms along Swillage Lane, Decoy Lane, the Chestnut Tree house, and

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>Swillage Lane, Seldon Lant, Decoy Lane, the Chestnut Tree house, and a number of isolated farms.</p> <p>Additional sensitive receptors within 20m along AA-05, AA-18, AA-21, AA-29, AA-16, AA-17, AA-19 and AA-20, on the A284, Lillian Terrace/The Vinery, Decoy Lane, Hammerpot, Swillage Lane, and Michelgrove Lane.</p>	<p>Additional sensitive receptors within 20m for AA-22 and AA-31.</p>	<p>AA-23, AA-24, AA-25, AA-26, AA-27 and AA-32.</p>	<p>a number of isolated farms near Long Furlong Lane and Michelgrove Lane.</p> <p>Additional sensitive receptors within 20m along AA-21, AA-28, AA-29, AA-30, AA-31 (if via LACR-01b) and AA-32 (if via LACR-01c), on Michelgrove Lane, Blakehurst Lane and several lanes in the Angmering Park area.</p>
Soil and agriculture	<p>Additional area of approximately 47ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary.</p>	<p>Additional area of agricultural land of approximately 16.5ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary.</p>	<p>Additional area of approximately 27.5ha potentially subject to temporary disturbance during the construction phase, over and above the original PEIR Assessment Boundary.</p>	<p>Additional area of agricultural land of 23.5ha (not including the corridor through the woodland area) potentially subject to temporary disturbance during the construction phase.</p> <p>Additional area of 1.11ha of woodland soils effected within the reduced width (20m) working corridor at the</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
				<p>Warningcamp and New Down Local Wildlife Site and plantation on ancient woodland soils (PAWS) listed on the Ancient Woodland Inventory.</p> <p>The total area for compensation required for LACR-02 is approximately 11.0ha, of which approximately 7.4ha is shown on provisional ALC mapping as Grade 3. Based on the assumption that this is BMV land (Grade 3a) and that permanent degradation of this area of agricultural land would occur due to the loss of the soil's biomass function, the magnitude of change is low, and the significance of the effect is moderate adverse (Potentially Significant).</p>
Noise and vibration (onshore)	Residential receptors have been identified within 50m of LACR-01a (residential dwellings on	Additional noise sensitive receptors within 20m of	New noise residential receptors within approximately 60m from the proposed trenchless	Additional residential receptors have been identified within 50m of LACR-02 (residential

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>Poling Street, residential dwellings on Lillian Terrace/The Vinery, residential dwellings adjacent to the A27, and residential dwellings at Hammerpot).</p> <p>New noise residential receptors within approximately 60m from the proposed trenchless crossing areas at the associated TCs.</p> <p>Additional noise sensitive receptors within 20m of LACR-01a for associated AAs.</p>	<p>LACR-01b for associated AAs.</p>	<p>crossing areas at the associated TCs.</p> <p>Additional noise sensitive receptors within 20m of LACR-01c for associated AAs.</p>	<p>dwellings on Clay Lane, residential dwellings on Blakehurst Lane, and Norfolk House on Swillage Lane).</p> <p>New noise residential receptors within approximately 60m from the proposed trenchless crossing areas at the associated TCs.</p> <p>Additional noise sensitive receptors within 20m of LACR-02 for associated AAs.</p>
Terrestrial ecology and nature conservation	<p>Trenchless crossing of ancient woodland (listed as Plantation on Ancient Woodland Site (PAWS)) at Michelgrove Park (TC-26).</p> <p>Habitats crossed largely include arable farmland bounded by hedgerows</p>	<p>Passes through a range of arable and improved grassland fields that are bounded, in places, by a small number of hedgerows and treelines.</p> <p>Passes adjacent to Harrow Hill good quality semi-improved grassland</p>	<p>Passes through a range of arable and improved grassland fields that are bounded, in places, by a number of hedgerows and treelines.</p>	<p>Loss of woodland at New Down Local Wildlife Site (LWS) continues to be Significant.</p> <p>Crosses Poling Copse LWS via TC-31</p> <p>Loss of ancient woodland soils (PAWS) (approximately 0.99ha) along the line of a</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>south of A27. North of A27 LACR-01a crosses a number of arable and pasture fields, many of which are bounded by Ancient Woodland blocks.</p> <p>One semi-natural broadleaved woodland may be removed.</p>	<p>and lowland calcareous grassland.</p>		<p>track between Lower Wepham Wood, Upper Wepham Wood, Tenantry Copse and Upper Oldfield Copse, constituting a Significant effect.</p> <p>Three areas of ancient woodland crossed by TC-31 (Coots Dale), TC-32 (Upper Oldfield Copse) and TC-33 (Beech Copse).</p> <p>Habitats crossed dominated by arable fields that are bounded by hedgerows or treelines.</p>
Transport	<p>The following additional PRoW effects to those assessed at PEIR:</p> <p>2022, 2199, 2198, 2176, 2190, 2188, 2208, 2187/1, 2174_1, 2180_1, 2175, 2111, 2175, 2211_1 and 2210.</p>		<p>The following additional PRoW effects to those assessed at PEIR:</p> <p>2262 and 2260_1.</p>	<p>The following additional PRoW effects to those assessed at PEIR:</p> <p>2217, 2218, 3740, 2192_2, 2175, 2111, 2211_1, 2210 and 2180_1</p>
Ground conditions	<p>Swillage Lane Landfill located immediately adjacent to part of</p>		<p>Long Furlong, Findon Landfill located approximately 35m to the</p>	<p>The Warningcamp Quarry Locally Important Geological Site (LIGS) will be</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>Swillage Lane to be used as a permanent access (AA-20) but approximately 150m from LACR-01a itself at its closest point.</p> <p>The Vinery Industrial Estate located adjacent to the A27 and to be used as a temporary construction access (AA-16) and a permanent access (AA-17).</p>		<p>south of a temporary construction and permanent access (AA-25) off Long Furlong (A280) and approximately 700m from LACR-01c itself at its closest point.</p>	<p>approximately 145m to the north of the AA-28 and approximately 195m from the onshore cable corridor at its closest points.</p>
Historic environment	<p>During the construction phase of LACR-01a, there is potential for a medium magnitude of change to a receptor of high heritage significance (grade II listed The Old Cottage 1027714).</p> <p>Bronze Age settlement activity at The Vinery (MWS14193) within</p>	<p>AA-22 leading from Michelgrove Lane utilises an existing surfaced trackway which crosses a scheduled monument. This scheduled monument is the Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446).</p> <p>Potentially high heritage significance are indicated by an Archaeological</p>	<p>With LACR-02 are features (LDr_410 to LDr_417) relating to a relic field system which appears to extend from the scheduled Itford Hill style settlement and an Anglo-Saxon barrow field at New Barn Down (1017446).</p> <p>Unknown remains of high heritage significance within the vicinity of Blackpatch Hill, are</p>	<p>Areas of woodland crossed by TC-31 and TC-32 including Coots Dale and part of Upper Oldfield Copse.</p> <p>AA-32 intersects with the scheduled remains of a Itford Hill style settlement (1017446) and Neolithic settlement activity.</p> <p>AA-31/AA-32 traverses Barpham Hill, where other barrow sites are known.</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
	<p>adjacent areas of the LACR-01a boundary.</p> <p>Known scheduled site of a Roman-British villa (1015886) within the study area at crossing of A27. High potential for archaeological remains to be present.</p> <p>Potential for buried palaeoenvironment deposits within the Arun floodplain and at tributary crossings.</p> <p>Evidence for numerous historic extraction pits.</p> <p>Features include linear banks (LDr_422, LDr_425, LDr_429 and LDr_430) suggestive of field boundaries or trackways.</p>	<p>Notification Area (ANA) relating to multi-period archaeological features on Harrow Hill (SDNPA 030).</p> <p>Evidence for numerous historic extraction pits.</p> <p>Linear banks identified (LDr_407, LDr_408, LDr_441, LDr_442, LDr_444 to LDr_451 and LDr_455) and (LDr_406 and LDr_452).</p> <p>Features also lie within the same vicinity as HER records relating to Bronze Age ditches (MWS2864) and an Iron Age-Romano British Settlement (MWS2863).</p>	<p>indicated by another ANA (SDNPA 031).</p> <p>Site of a barrow of possible Bronze Age on Blackpatch (MWS8026 and MWS3388), within ANA SDNPA 031.</p> <p>Iron Age or Roman field system (MWS246 and MWS415) near Muntham Court</p> <p>Possible barrow (LDr_132) and a linear earthwork bank (LDr_388).</p>	<p>Roman road passes adjacent to AA-30.</p> <p>Roman lynchets (MWS8478) on southern slopes of Harrow Hill, crossed by AA-32.</p> <p>AA-31/AA-32 lies adjacent to the scheduled Upper Barpham Farm DMV (1015882) and AA-32 crosses earthwork remains characteristic of a medieval rectangular enclosure (MWS8478).</p> <p>Numerous historic extraction pits and a former brick yard, (AA-30), and known lime kiln sites.</p> <p>Historic farmstead, Old Blakehurst.</p> <p>linear features crossed LDr_425 and numerous linear features at Auxiliary Unit Operational Base at in Upper Wepham Wood (MWS8192).</p>

Aspect	Longer Alternative Cable Route (LACR)			
	LACR-01a	LACR-01b	LACR-01c	LACR-02
Water environment	<p>Additional water environment receptors within the vicinity of LACR-01a have been identified and assessed in Tables L-1 of Appendix L.</p> <p>Potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a low or medium magnitude of effect and this could be potentially significant.</p>	<p>Additional water environment receptors within the vicinity of LACR-01b have been identified and assessed in Tables L-2 of Appendix L.</p> <p>Potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a low or medium magnitude of effect and this could be potentially significant.</p>	<p>Additional water environment receptors within the vicinity of LACR-01c have been identified and assessed in Tables L-3 of Appendix L.</p> <p>Potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a low or medium magnitude of effect and this could be potentially significant.</p>	<p>Additional water environment receptors within the vicinity of LACR-02 have been identified and assessed in Tables L-4 of Appendix L.</p> <p>Potential presence of karst fissuring means that there is a risk of drilling contamination from fluid breakout which could introduce a low or medium magnitude of effect and this could be potentially significant.</p>
Major accidents and disasters				
Greenhouse gas assessment				

Table C2 Review of Alternative Cable Routes

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
Socio-economics		Introduces additional receptors bridleway 2163 and footpaths 2163_1 and 2165.	Introduces an additional receptor (footpath 2189).	<p>ACR-04a&b introduces additional receptors including bridleways 2213 (part of Monarch's Way) and 2214, and also on footpath 2220-1.</p> <p>ACR-04a&c includes additional receptors including bridleway 2213 (part of Monarch's Way) and also on footpaths 2220-1 and 2226.</p>	Introduces an additional receptor (bridleway 3558-1) and on access land at Barpham Hill.	Introduces an option that will have potential to impact on Horsebridge Common.	Introduces additional receptors footpath 2519 and Bines Green Common.

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
Landscape and visual		ACR-02 introduces SC11: Littlehampton and Worthing Fringes landscape character type and residential properties along the A284, at Brookfield and Calcetto Farm, two PRow (2163/1 and bridleway 2163) to the east of the A284, recreational users of the paddocks south of Lyminster, and users of the access	Two mature hedgerows with trees that will be potentially affected by ACR-03.				

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
		<p>track to the southeast of Calcetto Farm.</p> <p>Increased visual effects will be experienced by receptors previously assessed in the PEIR including receptors at Wick and the caravan park, PRow 2165 to the north and northeast of the caravan park road users along the A284 and residents to the south and east of the settlement of Lyminster.</p>					

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
Air quality		Additional air quality residential receptors have been identified within 350m of ACR-02.				ACR-06 introduces new residential receptors within 350m along the B2135.	ACR-07 introduces new residential receptors within 350m along the B2135.
Soil and agriculture							
Noise and vibration (onshore)		ACR-02 introduces additional residential receptors in Lyminster, including a mobile home park within 10m.		All ACR-04 options introduce a single new noise sensitive receptor at the stables accessed from Blakehurst Lane.		ACR-06 introduces new residential receptors on the B2135.	ACR-07 introduces new residential receptors along Bines Road and in particular a house accessed along a private drive.
Terrestrial ecology and nature conservation	Area of Coastal and Floodplain Grazing Marsh (a		Area of Ancient Woodland (replanted) and a Local	ACR-04a includes New Down Local Wildlife Site and adjacent			Area of Coastal and Floodplain Grazing Marsh (a

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
	habitat of principal importance (HPI)).		Wildlife Site (LWS) known as Poling Copse. In addition, hedgerows present within ACR-03 are linked directly with ponds adjacent to ACR-03.	to an area of Ancient Woodland (The Knell).			habitat of principal importance (HPI)).
Transport		Three additional PRow (2163_1, 2163 and 2201_1) receptors and these will be incorporated into the outline Public Rights of Way Management Plan (PRowMP).	One additional PRow (2189) receptor that will be incorporated into the outline PRowMP.	The following additional PRow effects to those assessed at PEIR, these will be set out in the outline PRowMP: ACR-04a effects PRow 2212, ACR-04b PRow	One additional PRow (3558-1) receptor that will be incorporated into the outline PRowMP.		One additional PRow (2519) receptor that will be incorporated into the outline PRowMP.

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
				2213,2214 and 2215, ACR-04c PRoW 2226 ACR-04d PRoW 2221			
Ground conditions							
Historic environment		ACR-02 is within 20m of the Lyminster Conservation Area and also within close proximity to the grade II listed building Church Farmhouse (1276284) within the Conservation Area.	ACR-03 introduces an additional Archaeological Notification Area (ANA) (SDNPA 027).	ACR-04a lies adjacent to a HER record for earthworks of uncertain date. ACR-04b introduces two additional known non-designated heritage assets Bronze Age barrow (MWS3018); and Roman lynchet (MWS3019).	ACR-05 introduces a site of a former medieval leper settlement.	ACR-06 introduces potential change in the magnitude of effect at: Horsebridge House (1027454) Blakes Farmhouse (1353943) Bergen-op-Zoom Cottage (1393335)	ACR-07 introduces potential change in the magnitude of effect within 150m of the grade II listed building Hollybush Cottage (1191821) and 240m of the grade II listed building Doves Cottage (1191816).

Aspect	Alternative Cable Route (ACR)						
	ACR-01	ACR-02	ACR-03	ACR-04	ACR-05	ACR-06	ACR-07
Water environment				All ACR-04 options introduce: Worthing Chalk aquifer (GB40701G5 05300); Groundwater WFD water body; Arun Valley, Watersfield to Arundel LWS.			
Major accidents and disasters							
Greenhouse gas assessment							

Appendix D

Review summary for Modified Routes and Trenchless Crossings

Green Cells	As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there is <u>no change</u> to overall assessment outcomes and/or conclusions presented in the PEIR (RED 2021). Text is provided to clarify where appropriate, including notable changes to environmental receptors since PEIR where relevant
Orange Cells	As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential increase</u> in the overall assessment of significance presented at PEIR. Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.
White Cells	As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential reduction</u> in the overall assessment of effects presented at PEIR. Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.

Table D1 Review of Modified Routes

Aspect	Modified Route (MR)													
	MR-01	MR-02	MR-03	MR-04	MR-05	MR-06	MR-07	MR-08	MR-09	MR-10	MR-11	MR-12	MR-13	MR-14
Socio-economics														
Landscape and visual	MR-01 is closer to Mill Cottage and close to receptors at the golf course to the southeast.	MR-02 is closer to Climping Park.				One additional hedgerow will be crossed. MR-06 is closer to Ancient Woodland.		Two additional hedgerows will be potentially affected. MR-08 is closer and is 60m to Green Farm House and Green Farm Barn.	MR-09 is closer to Ashurst.			Up to five additional hedgerows could potentially be affected.		
Air quality														
Soil and agriculture														

Aspect	Modified Route (MR)													
	MR-01	MR-02	MR-03	MR-04	MR-05	MR-06	MR-07	MR-08	MR-09	MR-10	MR-11	MR-12	MR-13	MR-14
Noise and vibration (onshore)														
Terrestrial ecology and nature conservation	MR-01 includes Climping Beach SSSI and a belt of woodland running north west from Mill Cottage.					MR-06 is adjacent to a stand of Ancient Woodland and Sullington Hill LWS.		MR-08 includes an additional single filed tree within MR-08.	Mature trees adjacent to the boundary of MR-09.			An additional pond is located within MR-12 and this will be retained.	Two additional ponds are located within MR-13 and these will be retained.	
Transport														
Ground conditions		MR-02 is adjacent to an area of historical landfilling indicated to contain inert waste (J L Baird Climping landfill).											MR-13 includes three small historical ground workings listed as Brit Pit entries.	
Historic environment								MR-08 is closer and is 60m from a grade II listed building (Green Farmhouse - 1027190).	MR-09 is 125m from a grade II listed buildings (Bloques Farmhouse -1191892) and 150m from a grade II listed building (The Fountain Inn - 1027457).					

Aspect	Modified Route (MR)													
	MR-01	MR-02	MR-03	MR-04	MR-05	MR-06	MR-07	MR-08	MR-09	MR-010	MR-11	MR-12	MR-13	MR-14
Water environment												MR-12 overlaps with an area of Flood Zone 2 and a small area of Flood Zone 3.	MR-13 overlaps with an area of Flood Zone 2.	
Major accidents and disasters														
Greenhouse gas assessment														

Table D2 Review of Trenchless Crossings

Aspect	Trenchless Crossing (TC)			
	TC-12	TC-19	TC-20	TC-21
Socio-economics				
Landscape and visual	TC-12 allows for the preservation of existing vegetation (mature trees and hedgerows) along Water Lane and the associated stream crossing.	TC-19 allows for the preservation of vegetation (mature trees) along the existing watercourse to the southeast of Oakendene Manor.	TC-20 allows for the preservation of vegetation (mature trees and hedgerows) along Kent Street Lane to the east of Oakendene Manor.	TC-21 allows for the preservation of vegetation (mature trees and hedgerows) along Wineham Lane.
Air quality	TC-12 introduces additional receptors along Water Lane.	TC-19 includes additional receptors.	TC-20 includes additional receptors.	TC-21 includes additional receptors.
Soil and agriculture				
Noise and vibration (onshore)	TC-12 introduces new residential receptors and All Saints Church on Water Lane.	TC-19 introduces new residential receptors (i.e., Taintfield Farm, Westbridge Farm).	TC-20 introduces a new residential receptor (i.e., Southlands Farm).	TC-21 introduces new residential receptors (i.e. Westridge Place, Oakfield Farm).
Terrestrial ecology and nature conservation	TC-12 reduces the level of effect on a chalk stream and an area of woodland by ensuring that they remain intact and functional.	TC-19 enables native hedgerows and treelines to be maintained intact.	TC-20 reduces the level of effect on a woodland strip bordering Kent Street by ensuring that it remains intact and functional.	
Transport	TC-12 includes a trenchless crossing of Water Lane.		TC-20 includes a trenchless crossing of Kent Street.	TC-21 includes a trenchless crossing of Wineham Lane.
Ground conditions				
Historic environment				
Water environment		TC-19 area overlaps with part of the floodplain associated with the Ordinary Watercourse.		TC-21 area overlaps with part of the floodplain associated with the Ordinary Watercourse.
Major accidents and disasters				
Greenhouse gas assessment				

Appendix E

Review summary for alternative temporary and construction accesses

Green Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there is <u>no change</u> to overall assessment outcomes and/or conclusions presented in the PEIR (RED 2021).</p> <p>Text is provided to clarify where appropriate, including notable changes to environmental receptors since PEIR where relevant</p>
Orange Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential increase</u> in the overall assessment of significance presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>
White Cells	<p>As a result of the alternative or modification to the onshore part of the original PEIR Assessment Boundary, there has been a potential change in magnitude of impact leading to a <u>potential reduction</u> in the overall assessment of effects presented at PEIR.</p> <p>Text is provided where appropriate, indicating whether there is likely to be a change to the assessment of significance.</p>

Table E1 Review of additional temporary construction and permanent accesses

Aspect	Alternative temporary and construction accesses (AA)												
	AA-01	AA-02	AA-04	AA-07	AA-08	AA-09	AA-10	AA-11	AA-12	AA-13	AA-14	AA-15	
Socio-economics			AA-04 interacts with footpath 2165.		AA-08 interacts with bridleway 2219 which is part of the promoted 'Monarch's Way' long distance route.	AA-09 interacts with bridleway 2260 for approx. 3km. AA-08 also interacts with an unrecorded route which provides an alternative to the formal bridleway in the vicinity of Lower Barpham	AA-10 interacts with restricted byway (RB) 2092 for approx. 3km. RB 2092 is part of the South Downs Way National Trail.					AA-14 interacts with bridleway 2711.	

Aspect	Alternative temporary and construction accesses (AA)											
	AA-01	AA-02	AA-04	AA-07	AA-08	AA-09	AA-10	AA-11	AA-12	AA-13	AA-14	AA-15
Landscape and visual					AA-08 crosses grassland between two areas of Ancient Woodland at Woodleighs and South Woodleighs and affecting a transitional area Arun Flood Plain and Arun Valley Sides landscape character. A section of low hedgerow and some mature trees will be adversely affected. Visual receptors include road users and walkers on the Monarch's Way within the SDNP.	AA-09 includes an area of the Arun to Adur Open Downs landscape character within the SDNP. Hedgerows and mature trees that are likely to require some pruning, although it is assumed that all mature trees will be retained. Visual receptors include road users, residents and walkers on the PRow 2260 and elevated views from Harrow Hill and Open Access land on Barpham Hill within the SDNP.	AA-10 includes existing PRow (RB 2092) through an area of the Arun to Adur Open Downs landscape character within the SDNP. Mature trees that are likely to require some pruning, although it is assumed that all mature trees will be retained. Visual receptors include walkers on the South Downs Way and other PRow within the SDNP.	AA-11 includes an area of the Arun to Adur Scarp Foot Slopes landscape character within the SDNP. AA-11 crosses one roadside hedge, one remnant hedge and open pasture fields. Visual receptors will be limited to road users and residents along the A283.	AA-12 includes an area of the Arun to Adur Scarp Foot Slopes landscape character within the SDNP. AA-12 crosses one hedgerow, and open pasture fields with scattered mature trees. Visual receptors limited to road users and residents along the A283 at a location where there are open views into the SDNP.		AA-14 crosses an area of Wiston Low Weald landscape character just north of the SDNP. AA-14 crosses two hedgerows with trees north of a small coniferous plantation. Visual receptors limited to road users and residents along the A283 / PRow 2711.	AA-15 includes an area of Eastern Low Weald landscape character. AA-15 includes some areas where there are mature trees and shrubs close to or overhanging the road and some light pruning is likely to be required to maintain access and visibility splays. Visual receptors limited to local residents at the Eastridge Manor nursing home, Oakfield Farm, Eastridge Lodge and Eastfield Stud which share the same access and users of the PRow 1789 and road users on Wineham Lane.
Air quality						Additional receptors along AA-09.	Additional receptors along AA-10					Additional receptors on Wineham Lane.

Aspect	Alternative temporary and construction accesses (AA)											
	AA-01	AA-02	AA-04	AA-07	AA-08	AA-09	AA-10	AA-11	AA-12	AA-13	AA-14	AA-15
Soil and agriculture												
Noise and vibration (onshore)						Additional receptors along AA-09	Additional receptors along AA-10.					Additional receptors on Wineham Lane.
Terrestrial ecology and nature conservation	AA-01 includes a small additional area within an arable field.		AA-04 requires access over an arable field and the creation of an additional entrance way within an existing hedgerow (an HPI).	AA-07 includes a small additional area within an arable field.	AA-08 lies within an area of marshy grassland that lies between areas of Ancient Woodland and is adjacent to the Warning camp to New Down LWS.	AA-09 is an existing track that is bound by fields, small blocks of woodland and hedgerows. There will be some loss of pasture and arable land for passing places and other works.	AA-10 includes an existing track and pasture and arable fields. AA-10 is bound by fields, small blocks of woodland (including Ancient Woodland) and hedgerows. There will be some loss of pasture and arable land for passing places and other works.	AA-11 crosses arable fields and a hedgerow that are typical of the area.	AA-12 crosses the same field as an access route in the PEIR.		AA-14 uses an existing track and field entrance to gain access to an arable field just south of the onshore cable corridor. AA-12 crosses an additional hedgerow.	AA-15 is an existing track bound in places by tree lines.
Transport				AA-07 includes a new access onto Crossbush Lane.	AA-08 includes one new access onto Crossbush Lane	AA-09 includes one new access to the A280.	AA-10 includes one new access to the A283.	AA-11 includes one new access to the A280.	AA-12 includes one new access to the A280.			
Ground conditions												
Historic environment			AA-04 lies within 40m of the Lyminster Conservation Area and within 90m Church			AA-09 introduces new known receptors including a scheduled monument and	AA-10 introduces new known receptors. AA-10 lies adjacent to scheduled monument,	AA-11 lies within close proximity to two grade II listed buildings, being within 10m from Chanctonbury Lodge			AA-14 is within 15m of grade II listed building The Old School (1284545).	

Aspect	Alternative temporary and construction accesses (AA)											
	AA-01	AA-02	AA-04	AA-07	AA-08	AA-09	AA-10	AA-11	AA-12	AA-13	AA-14	AA-15
			Farmhouse (1276284).			Archaeological Notification Area (ANA). AA-09 passes within 120m of Michelgrove Cottages (1217075) and 170m of the Ruins of Michelgrove (1353888), both grade II listed buildings.	the Muntham Court Romano-British site (1005850).	(1027239) and within 20m of Old Clayton (1039953).				
Water environment					AA-08 crosses additional floodplain associated with the River Arun along the bottom of the Warningcamp valley.							
Major accidents and disasters												
Greenhouse gas assessment												

