

# A27

## Arundel Bypass

Preliminary Environmental Information Report

Volume 4b

Technical Appendices

11 January 2022 – 8 March 2022



This page has been left intentionally blank

## About this report

Thank you for taking part in our statutory public consultation on the proposed A27 Arundel Bypass Scheme. This consultation is an important step towards delivering the Scheme, which will bring many benefits to local communities and the region's economy, whilst making journeys quicker and safer, and freeing Arundel town and neighbouring communities from congestion.

To inform this consultation, we have prepared a suite of information which you can find on National Highway's website ([www.nationalhighways.co.uk/our-work/south-east/a27-arundel-bypass](http://www.nationalhighways.co.uk/our-work/south-east/a27-arundel-bypass)), and which includes this Preliminary Environmental Information Report (PEI Report). This report is set out in four volumes and describes the environmental setting of the Scheme and our preliminary assessments of the Scheme's potential significant environmental effects as described below:

Volume 1 - PEI Report Non-Technical Summary (NTS), a short summary which uses non-technical language.

Volume 2 - PEI Report, a detailed technical report (in two parts), which introduces the Scheme and describes its details, the alternatives considered, and the approach taken for the environmental assessment. The PEI Report presents and then summarises the preliminary assessment of the likely significant environmental effects of the Scheme as well as considers the potential inter-relationships between the topics covered, and between the Scheme and other developments in the surrounding area.

Volume 3 – PEI Report Figures, which provide further information in the form of figures to support the initial findings presented in Volume 2.

**Volume 4 – PEI Report Technical Appendices, which provide further information in the form of technical information (in three parts) to support the initial findings presented in Volume 2.**

Each volume's Contents Page lists all the topics discussed. Due to their size, Volume 2 is presented in two parts (2a and 2b) and Volume 4 is presented in three parts (4a, 4b and 4c). It should be noted that those topics that are not included in the individual sub-volumes are greyed out.

This report should be read alongside the other supporting consultation materials such as the consultation brochure, which will explain where you can find more details regarding the Scheme and how to provide your comments.

This consultation is an important opportunity for you to share your comments on the Scheme ahead of submission of our Development Consent Order application, which is expected to happen later in 2022. We'd like to hear what you think, so please share any ideas, local knowledge or concerns that you may have. Your feedback to this consultation is important and will continue to help shape the design of the Scheme.

## Table of contents

Those items below that are highlighted in Grey do not form part of this volume.

Chapter	Pages
<b>Appendix 1-A EIA Scoping Report.....</b>	<b>1</b>
<b>Appendix 1-B EIA Scoping Opinion.....</b>	<b>2</b>
<b>Appendix 1-C EIA Scoping Opinion Response.....</b>	<b>3</b>
The Planning Inspectorate .....	3
Arun District Council .....	52
Environment Agency.....	61
Forestry Commission.....	72
Historic England .....	75
Horsham District Council .....	81
Health and Safety Executive .....	82
Natural England.....	83
Public Health England .....	109
South Downs National Park Authority .....	147
Slindon Parish Council.....	172
Walberton Parish Council .....	175
West Sussex County Council.....	188
<b>Appendix 7-A Landscape and Visual Baseline .....</b>	<b>239</b>
Landscape baseline.....	239
Published landscape character assessments.....	244
Visual baseline .....	256
<b>Appendix 8-A Habitat Regulations Assessment (HRA), Screening .....</b>	<b>267</b>
Introduction .....	267
Methodology.....	273
Conclusion .....	319
<b>Appendix 8-A-1 Advice Note 10 HRA Screening Matrices.....</b>	<b>320</b>
<b>Appendix 9-A Land Contamination Methodology .....</b>	<b>332</b>
<b>Appendix 13-A WFD Scoping Report .....</b>	<b>337</b>
Introduction .....	337
Methodology.....	341
Field surveys .....	344
Limitations and assumptions.....	346
Baseline conditions.....	347

---

Baseline characteristics of WFD quality elements .....	354
WFD screening and scoping assessment .....	359
Mitigation commitments .....	369
Conclusion .....	373
References .....	374

---

## Appendix 1-B EIA Scoping Opinion



# **SCOPING OPINION:**

## **Proposed A27 Arundel Bypass**

**Case Reference: TR010045**

---

Adopted by the Planning Inspectorate (on behalf of the Secretary of State) pursuant to Regulation 10 of The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

**April 2021**

[This page has been intentionally left blank]



## CONTENTS

<b>1.</b>	<b>INTRODUCTION.....</b>	<b>1</b>
1.1	Background .....	1
1.2	The Planning Inspectorate’s Consultation.....	2
<b>2.</b>	<b>THE PROPOSED DEVELOPMENT .....</b>	<b>4</b>
2.1	Introduction .....	4
2.2	Description of the Proposed Development.....	4
2.3	The Planning Inspectorate’s Comments.....	5
<b>3.</b>	<b>ES APPROACH.....</b>	<b>7</b>
3.1	Introduction .....	7
3.2	Relevant National Policy Statements (NPSs).....	8
3.3	Scope of Assessment .....	8
3.4	Coronavirus (COVID-19) Environmental Information and Data Collection	11
3.5	Confidential and Sensitive Information.....	11
<b>4.</b>	<b>ASPECT BASED SCOPING TABLES.....</b>	<b>13</b>
4.1	Air Quality.....	13
4.2	Cultural Heritage.....	16
4.3	Landscape and Visual.....	19
4.4	Biodiversity .....	22
4.5	Geology and Soils.....	25
4.6	Material Assets and Waste .....	28
4.7	Noise and Vibration .....	30
4.8	Population and Human Health.....	32
4.9	Road Drainage and the Water Environment .....	34
4.10	Climate.....	36
4.11	Cumulative.....	38
<b>5.</b>	<b>INFORMATION SOURCES .....</b>	<b>39</b>
 <b>APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED</b>		
 <b>APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES</b>		

[This page has been intentionally left blank]

# 1. INTRODUCTION

## 1.1 Background

- 1.1.1 On 25 February 2021, the Planning Inspectorate (the Inspectorate) on behalf of the Secretary of State (SoS) received a scoping request from Highways England (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for the proposed the A27 Arundel Bypass (the Proposed Development).
- 1.1.2 In accordance with Regulation 10 of the EIA Regulations, an Applicant may ask the SoS to state in writing its opinion '*as to the scope, and level of detail, of the information to be provided in the environmental statement*'.
- 1.1.3 This document is the Scoping Opinion (the Opinion) provided by the Inspectorate on behalf of the SoS in respect of the Proposed Development. It is made on the basis of the information provided in the Applicant's report entitled A27 Arundel Bypass Environmental Impact Assessment Scoping Report (Document No: HE551523-BAM-EGN-ZZ-RP-LE-0002 25/02/21) (the Scoping Report). This Opinion can only reflect the proposals as currently described by the Applicant. The Scoping Opinion should be read in conjunction with the Applicant's Scoping Report.
- 1.1.4 The Applicant has notified the SoS under Regulation 8(1)(b) of the EIA Regulations that they propose to provide an Environmental Statement (ES) in respect of the Proposed Development. Therefore, in accordance with Regulation 6(2)(a) of the EIA Regulations, the Proposed Development is EIA development.
- 1.1.5 Regulation 10(9) of the EIA Regulations requires that before adopting a scoping opinion the Inspectorate must take into account:
- (a) *any information provided about the proposed development;*
  - (b) *the specific characteristics of the development;*
  - (c) *the likely significant effects of the development on the environment; and*
  - (d) *in the case of a subsequent application, the environmental statement submitted with the original application.*
- 1.1.6 This Opinion has taken into account the requirements of the EIA Regulations as well as current best practice towards preparation of an ES.
- 1.1.7 The Inspectorate has consulted on the Applicant's Scoping Report and the responses received from the consultation bodies have been taken into account in adopting this Opinion (see Appendix 2).
- 1.1.8 The points addressed by the Applicant in the Scoping Report have been carefully considered and use has been made of professional judgement and experience in order to adopt this Opinion. It should be noted that when it comes to consider the ES, the Inspectorate will take account of relevant legislation and guidelines. The Inspectorate will not be precluded from requiring additional information if it

is considered necessary in connection with the ES submitted with the application for a Development Consent Order (DCO).

- 1.1.9 This Opinion should not be construed as implying that the Inspectorate agrees with the information or comments provided by the Applicant in their request for an opinion from the Inspectorate. In particular, comments from the Inspectorate in this Opinion are without prejudice to any later decisions taken (eg on submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a Nationally Significant Infrastructure Project (NSIP) or Associated Development or development that does not require development consent.
- 1.1.10 Regulation 10(3) of the EIA Regulations states that a request for a scoping opinion must include:
- (a) *a plan sufficient to identify the land;*
  - (b) *a description of the proposed development, including its location and technical capacity;*
  - (c) *an explanation of the likely significant effects of the development on the environment; and*
  - (d) *such other information or representations as the person making the request may wish to provide or make.*
- 1.1.11 The Inspectorate considers that this has been provided in the Applicant's Scoping Report. The Inspectorate is satisfied that the Scoping Report encompasses the relevant aspects identified in the EIA Regulations.
- 1.1.12 In accordance with Regulation 14(3)(a), where a scoping opinion has been issued in accordance with Regulation 10 an ES accompanying an application for an order granting development consent should be based on *'the most recent scoping opinion adopted (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion)'*.
- 1.1.13 The Inspectorate notes the potential need to carry out an assessment under The Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'), as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This assessment must be co-ordinated with the EIA in accordance with Regulation 26 of the EIA Regulations.

## **1.2 The Planning Inspectorate's Consultation**

- 1.2.1 In accordance with Regulation 10(6) of the EIA Regulations the Inspectorate has consulted the consultation bodies before adopting a scoping opinion. A list of the consultation bodies formally consulted by the Inspectorate is provided at Appendix 1. The consultation bodies have been notified under Regulation 11(1)(a) of the duty imposed on them by Regulation 11(3) of the EIA Regulations to make information available to the Applicant relevant to the preparation of the ES. The Applicant should note that whilst the list can inform their consultation, it should not be relied upon for that purpose.

- 1.2.2 The list of respondents who replied within the statutory timeframe and whose comments have been taken into account in the preparation of this Opinion is provided, along with copies of their comments, at Appendix 2, to which the Applicant should refer in preparing their ES.
- 1.2.3 The ES submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies. It is recommended that a table is provided in the ES summarising the scoping responses from the consultation bodies and how they are, or are not, addressed in the ES.
- 1.2.4 Any consultation responses received after the statutory deadline for receipt of comments will not be taken into account within this Opinion. Late responses will be forwarded to the Applicant and will be made available on the Inspectorate's website. The Applicant should also give due consideration to those comments in preparing their ES.

## **2. THE PROPOSED DEVELOPMENT**

### **2.1 Introduction**

2.1.1 The following is a summary of the information on the Proposed Development and its site and surroundings prepared by the Applicant and included in their Scoping Report. The information has not been verified and it has been assumed that the information provided reflects the existing knowledge of the Proposed Development and the potential receptors/ resources.

### **2.2 Description of the Proposed Development**

2.2.1 The Applicant's description of the Proposed Development, its location and technical capacity (where relevant) is provided in Section 2 of the Scoping Report.

2.2.2 The Proposed Development would form approximately 8 km of a new dual carriageway located to the south of the existing A27 and would act as a bypass to the town of Arundel in West Sussex. The Proposed Development is intended to improve safety, reduce journey time for vehicles and minimise uncertainty issues for travellers in the local area of Arundel that arise from current peak hour congestion, which is forecast to increase along the existing A27. The Arundel Bypass is proposed to start to the east of Arundel at the Crossbush Junction on the existing A27 alignment and re-join the existing A27 to the east of the A27/A29 Fontwell (East) roundabout. The route and proposed red line boundary for the Proposed Development are shown in Figures 1 (as amended) and 2 of the Scoping Report.

2.2.3 Key features of the Proposed Development include a full grade separated junction at Crossbush with the A27 crossing under the junction; new bridges over the Arun Valley Railway, the River Arun and Binsted Rife watercourses; a crossing of the River Arun floodplain of approximately 1.55 km; a new grade separated junction with the existing A27 at Tye Lane to the north of village of Walberton; closure of Tye Lane south of the Proposed Development; and de-trunking and other works to approximately 6.6 km of the existing A27 between the junctions with Tye Lane and Mill Road and the Crossbush Junction. To minimise the number of junctions on the proposed bypass, minor roads crossed by the Proposed Development would be closed and diverted or accommodated by an underbridge or an overbridge as shown in Figure 2.

2.2.4 The new bypass would be outside the boundary of the South Downs National Park (SDNP) although sections of the Proposed Development are adjacent to and south of the SDNP boundary.

2.2.5 The principal urban areas within 5 km of the Proposed Development are Arundel to the north and Littlehampton to the south. There are a number of smaller settlements and villages also located within 5 km of the Proposed Development.

2.2.6 The existing land use is predominantly agricultural, with farm buildings, arable land and small settlements. The Proposed Development would cross the north to south flowing River Arun and its floodplain. The River Arun is tidal at the

proposed crossing point. The proposals also include crossings of Binsted Rife and Tortington Rife, located to the west of the River Arun.

## **2.3 The Planning Inspectorate's Comments**

### **Description of the Proposed Development**

- 2.3.1 The ES should set out, amongst other details, the total site area and length of the Proposed Development along with the design and other relevant features within the main text. The location of the development and description of the physical characteristics of the whole of the Proposed Development should be set out clearly within the ES. A plan showing the red line boundary for the Development Control Order (DCO) limits for the Proposed Development should be provided in the ES to a scale which should be consistent with the other supporting plans for the DCO.
- 2.3.2 The location and a description of the physical characteristics of the whole development, including any requisite demolition works and the land-use requirements during construction and operation phases should be set out in sufficient detail so that it is clear what has been assessed in the ES, including figures, tables and other supporting documents as necessary.
- 2.3.3 Information on demolition works, and the access requirements for each of the phases, along with the land use requirements of the Proposed Development should be included in the ES and an assessment of likely significant effects that may arise from these matters.
- 2.3.4 Table 64 of the Scoping Report includes a summary of those aspects of the Proposed Development which the Applicant intends to scope out of the ES.
- 2.3.5 The description of the Proposed Development within Section 2.6 of the Scoping Report is not accompanied by any figures and lacks design details of key features such as locations and configurations of junctions, roundabouts, bridges and abutments. The Inspectorate expects that at the point of application the ES should include a detailed description of the Proposed Development which includes all of the works for which development consent is sought, supported by clear figures. Details of components such as bridge structures, signage, gantries, lighting, drainage features, landscaping and environmental mitigation features should be provided in the ES. It is recommended that such descriptions are supported by visualisations, such as photomontages and 3D models.
- 2.3.6 There are no specific locations detailed as to which areas will be utilised for environmental mitigation, construction compounds, material storage, and other purposes. Descriptions of such key details and impacts should be expanded and refined within the ES.
- 2.3.7 The Proposed Development will result in temporary and permanent land take. The ES should clearly show and describe the land use requirements for construction and operational phases, allowing for differentiation between the different types.

- 2.3.8 The ES should include details of the construction phase such as the working hours, programme of works, construction vehicle movements and access routes, location of construction compounds and other related information used to inform the assessment.

### **Alternatives**

- 2.3.9 The EIA Regulations require that the Applicant provide 'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'.
- 2.3.10 The Inspectorate acknowledges the Applicant's intention to consider alternatives within the ES. The Inspectorate would expect to see a discrete section in the ES that provides details of the reasonable alternatives studied and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects.

### **Flexibility**

- 2.3.11 The Inspectorate notes the Applicant's desire to incorporate flexibility into their draft DCO (dDCO) and its intention to apply a Rochdale Envelope approach for this purpose. Where the details of the Proposed Development cannot be defined precisely, the Applicant will apply a worst case scenario. The Inspectorate welcomes the reference to Planning Inspectorate Advice Note nine 'Using the 'Rochdale Envelope'<sup>1</sup> in this regard.
- 2.3.12 The Applicant should make every attempt to narrow the range of options and explain clearly in the ES which elements of the Proposed Development have yet to be finalised and provide the reasons. At the time of application, any Proposed Development parameters should not be so wide-ranging as to represent effectively different developments. The development parameters should be clearly defined in the dDCO and in the accompanying ES. It is a matter for the Applicant, in preparing an ES, to consider whether it is possible to robustly assess a range of impacts resulting from a large number of undecided parameters. The description of the Proposed Development in the ES must not be so wide that it is insufficiently certain to comply with the requirements of Regulation 14 of the EIA Regulations.
- 2.3.13 It should be noted that if the Proposed Development materially changes prior to submission of the DCO application, the Applicant may wish to consider requesting a new scoping opinion.

---

<sup>1</sup> Advice Note nine: Using the Rochdale Envelope. Available at:  
<https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

## **3. ES APPROACH**

### **3.1 Introduction**

- 3.1.1 This section contains the Inspectorate's specific comments on the scope and level of detail of information to be provided in the Applicant's ES. General advice on the presentation of an ES is provided in the Inspectorate's Advice Note Seven 'Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements'<sup>2</sup> and associated appendices.
- 3.1.2 Aspects/ matters (as defined in Advice Note Seven) are not scoped out unless specifically addressed and justified by the Applicant and confirmed as being scoped out by the Inspectorate. The ES should be based on the Scoping Opinion in so far as the Proposed Development remains materially the same as the Proposed Development described in the Applicant's Scoping Report.
- 3.1.3 The Inspectorate has set out in this Opinion where it has/ has not agreed to scope out certain aspects/ matters on the basis of the information available at this time. The Inspectorate is content that the receipt of a Scoping Opinion should not prevent the Applicant from subsequently agreeing with the relevant consultation bodies to scope such aspects / matters out of the ES, where further evidence has been provided to justify this approach. However, in order to demonstrate that the aspects/ matters have been appropriately addressed, the ES should explain the reasoning for scoping them out and justify the approach taken.
- 3.1.4 The Inspectorate has made effort to ensure that this Scoping Opinion is informed through effective consultation with the relevant consultation bodies. Unfortunately, at this time the Inspectorate is unable to receive hard copy consultation responses, and this may affect a consultation body's ability to engage with the scoping process. The Inspectorate also appreciates that strict compliance with COVID-19 advice may affect a consultation body's ability to provide their consultation response. The Inspectorate considers that Applicants should make effort to ensure that they engage effectively with consultation bodies and where necessary further develop the scope of the ES to address their concerns and advice. The ES should include information to demonstrate how such further engagement has been undertaken and how it has influenced the scope of the assessments reported in the ES.
- 3.1.5 Where relevant, the ES should provide reference to how the delivery of measures proposed to prevent/ minimise adverse effects is secured through dDCO requirements (or other suitably robust methods) and whether relevant consultation bodies agree on the adequacy of the measures proposed.

---

<sup>2</sup> Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements and annex. Available from: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

## **3.2 Relevant National Policy Statements (NPSs)**

- 3.2.1 Sector-specific NPSs are produced by the relevant Government Departments and set out national policy for NSIPs. They provide the framework within which the Examining Authority (ExA) will make their recommendation to the SoS and include the Government's objectives for the development of NSIPs. The NPSs may include environmental requirements for NSIPs, which Applicants should address within their ES.
- 3.2.2 The designated NPS relevant to the Proposed Development is the NPS for National Networks (NPSNN).

## **3.3 Scope of Assessment**

### **General**

- 3.3.1 The Inspectorate recommends that in order to assist the decision-making process, the Applicant uses tables:
- to demonstrate how the assessment has taken account of this Opinion;
  - to identify and collate the residual effects after mitigation for each of the aspect chapters, including the relevant interrelationships and cumulative effects;
  - to set out the proposed mitigation and/ or monitoring measures including cross-reference to the means of securing such measures (eg a dDCO requirement);
  - to describe any remedial measures that are identified as being necessary following monitoring; and
  - to identify where details are contained in the Habitats Regulations Assessment (HRA report) (where relevant), such as descriptions of National Site Network sites and their locations, together with any mitigation or compensation measures, are to be found in the ES.
- 3.3.2 The Inspectorate considers that where a DCO application includes works described as 'Associated Development', that could themselves be defined as an improvement of a highway, the Applicant should ensure that the ES accompanying that application distinguishes between; effects that primarily derive from the integral works which form the proposed (or part of the proposed) NSIP and those that primarily derive from the works described as Associated Development. This could be presented in a suitably compiled summary table. This will have the benefit of giving greater confidence to the Inspectorate that what is proposed is not in fact an additional NSIP defined in accordance with s22 of the PA2008.
- 3.3.3 Some of the figures (i.e. Figure 4, 5 and 6) in the Scoping Report are difficult to interpret due to the number of layers being shown. The Applicant is reminded that the ES should be clear and accessible to readers.

### **Baseline Scenario**

- 3.3.4 The ES should include a description of the baseline scenario with and without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.

### **Forecasting Methods or Evidence**

- 3.3.5 The ES should contain the timescales upon which the surveys which underpin the technical assessments have been based. For clarity, this information should be provided either in the introductory chapters of the ES (with confirmation that these timescales apply to all chapters), or in each aspect chapter.
- 3.3.6 The Inspectorate expects the ES to include a chapter setting out the overarching methodology for the assessment, which clearly distinguishes effects that are 'significant' from 'non-significant' effects. Any departure from that methodology should be described in individual aspect assessment chapters.
- 3.3.7 The ES should include details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.

### **Residues and Emissions**

- 3.3.8 The EIA Regulations require an estimate, by type and quantity, of expected residues and emissions. Specific reference should be made to water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases, where relevant. This information should be provided in a clear and consistent fashion and may be integrated into the relevant aspect assessments.
- 3.3.9 The Inspectorate notes that heat and radiation effects have been scoped out for assessment on the basis that they are unlikely to arise due to the nature of the Proposed Development. The Inspectorate agrees that significant heat and radiation effects are unlikely and that this matter may be scoped out of the ES.
- 3.3.10 The Applicant's Scoping Report contains a chapter on materials. This chapter refers to waste but does not make reference to consideration of any precise quantities or residues. The ES should include this information and assess the impacts associated for example, in terms of increased transport/HGV movements, emissions to air and noise etc.

### **Mitigation and Monitoring**

- 3.3.11 Any mitigation relied upon for the purposes of the assessment should be explained in detail within the ES. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. The ES should also address how any mitigation proposed is secured, with reference to specific dDCO requirements or other legally binding agreements.

- 3.3.12 The ES should identify and describe any proposed monitoring of significant adverse effects and how the results of such monitoring would be utilised to inform any necessary remedial actions.

### **Risks of Major Accidents and/or Disasters**

- 3.3.13 The ES should include a description and assessment (where relevant) of the likely significant effects resulting from accidents and disasters applicable to the Proposed Development. The Applicant should make use of appropriate guidance (e.g. that referenced in the Health and Safety Executives (HSE) Annex to Advice Note 11) to better understand the likelihood of an occurrence and the Proposed Development's susceptibility to potential major accidents and hazards. The description and assessment should consider the vulnerability of the Proposed Development to a potential accident or disaster and also the Proposed Development's potential to cause an accident or disaster. The assessment should specifically assess significant effects resulting from the risks to human health, cultural heritage or the environment. Any measures that will be employed to prevent and control significant effects should be presented in the ES.
- 3.3.14 Relevant information available and obtained through risk assessments pursuant to national legislation may be used for this purpose. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.
- 3.3.15 With respect to major events (the Applicant's term for major accidents and disasters) paragraph 5.7.2 explains why the Applicant does not intend to submit a dedicated chapter on major events as part of the ES. Section 5.7 sets out the Applicant's proposed approach to assessment of major events. The Scoping Report explains that potential effects resulting from major events would be reported in the relevant ES chapters, and as such major accidents and disasters will not be considered within a distinct chapter. The Inspectorate agrees that effects from major events could be reported on in other aspect chapters.

### **Climate and Climate Change**

- 3.3.16 The ES should include a description and assessment (where relevant) of the likely significant effects the Proposed Development has on climate (for example having regard to the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change. Where relevant, the ES should describe and assess the adaptive capacity that has been incorporated into the design of the Proposed Development. This may include, for example, alternative measures such as changes in the use of materials or construction and design techniques that will be more resilient to risks from climate change.

### **Transboundary Effects**

- 3.3.17 Schedule 4 Part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an ES. The Scoping Report states that the Proposed Development is likely to have significant effects on a European Economic Area (EEA) State.

- 3.3.18 Regulation 32 of the EIA Regulations inter alia requires the Inspectorate to publicise a DCO application on behalf of the SoS if it is of the view that the proposal is likely to have significant effects on the environment of another EEA state, and where relevant, to consult with the EEA state affected.
- 3.3.19 The Inspectorate considers that where Regulation 32 applies, this is likely to have implications for the examination of a DCO application. The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary effects and if so, what these are and which EEA States would be affected.

#### **A Reference List**

- 3.3.20 A reference list detailing the sources used for the descriptions and assessments must be included in the ES.

### **3.4 Coronavirus (COVID-19) Environmental Information and Data Collection**

- 3.4.1 The Inspectorate understands government enforced measures in response to COVID-19 may have consequences for an Applicant's ability to obtain relevant environmental information for the purposes of their ES. The Inspectorate understands that conducting specific surveys and obtaining representative data may be difficult in the current circumstance.
- 3.4.2 The Inspectorate has a duty to ensure that the environmental assessments necessary to inform a robust DCO application are supported by relevant and up to date information. Working closely with consultation bodies, the Inspectorate will seek to adopt a flexible approach, balancing the requirement for suitable rigour and scientific certainty in assessments with pragmatism in order to support the preparation and determination of applications in a timely fashion.
- 3.4.3 Applicants should make effort to agree their approach to the collection and presentation of information with relevant consultation bodies. In turn the Inspectorate expects that consultation bodies will work with Applicants to find suitable approaches and points of reference to allow preparation of applications at this time. The Inspectorate is required to take into account the advice it receives from the consultation bodies and will continue to do so in this regard.

### **3.5 Confidential and Sensitive Information**

- 3.5.1 In some circumstances it will be appropriate for information to be kept confidential. In particular, this may relate to personal information specifying the names and qualifications of those undertaking the assessments and / or the presence and locations of rare or sensitive species such as badgers, rare birds and plants where disturbance, damage, persecution or commercial exploitation may result from publication of the information.
- 3.5.2 Where documents are intended to remain confidential the Applicant should provide these as separate documents with their confidential nature clearly indicated in the title and watermarked as such on each page. The information

should not be incorporated within other documents that are intended for publication or which the Inspectorate would be required to disclose under the Environmental Information Regulations 2004.

- 3.5.3 The Inspectorate adheres to the data protection protocols set down by the Information Commissioners Office<sup>3</sup>. Please refer to the Inspectorate's National Infrastructure privacy notice<sup>4</sup> for further information on how personal data is managed during the Planning Act 2008 process.

---

<sup>3</sup> <https://ico.org.uk>

<sup>4</sup> <https://www.gov.uk/government/publications/planning-inspectorate-privacy-notice/customer-privacy-notice>

## 4. ASPECT BASED SCOPING TABLES

### 4.1 Air Quality

(Scoping Report Section 6)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.1.1	6.3.5, 6.8.15 and Table 64	Construction traffic assessment	The Scoping Report states that the construction phase is programmed to last for three years and as such an assessment of impacts on air quality from construction traffic should be undertaken in accordance with Highways England DMRB LA 105 Air Quality guidance and appended to the ES.
4.1.2	6.8.4 and Table 64	An assessment of all pollutants except NO <sub>2</sub> and PM <sub>10</sub> .	<p>The Scoping Report states that the local air quality assessment during operation of the Proposed Development will focus on NO<sub>2</sub> and PM<sub>10</sub> as these are principal pollutants of concern regarding emissions from road traffic.</p> <p>Sufficient evidence has not been provided to justify scoping out PM<sub>2.5</sub>. The ES should include an assessment of impacts resulting from increases of PM<sub>2.5</sub>.</p> <p>The ES should assess impacts from increases of all other relevant pollutants identified under the EU ambient air quality directive resulting from the Proposed Development, where likely significant effects can occur.</p>

ID	Ref	Other points	Inspectorate's comments
4.1.3	6.3.6	Study area	The ES should include a figure visually depicting the air quality study area for the assessment, the ARN and the study area for the

ID	Ref	Other points	Inspectorate's comments
			construction phase impacts. The extent of the study area should be agreed with relevant consultees, where possible.
4.1.4	6.4.3	Air Quality Management Areas (AQMA)	The ES should clearly set out and justify the choice of selected AQMAs included for assessment. The ES should include a map depicting the location of these AQMAs relevant to the boundary of the Proposed Development.
4.1.5	6.4.11	NO <sub>2</sub> diffusion tube monitoring	The ES should describe how the 50 locations for NO <sub>2</sub> diffusion tube monitoring previously undertaken by Highways England were decided. All relevant baseline data, necessary to inform the assessment of significant effects, should be included in the ES.
4.1.6	6.4.14	Assessment of impacts	The ES should assess the impacts to the designated sites identified within proximity to the ARN from the Proposed Development alone and cumulatively with other development. Specific mitigation measures required to address the effects on these sites from air pollutants should be identified and secured.
4.1.7	6.4.14	Sensitive receptors	<p>The ES should make specific reference to fish and other aquatic organisms as sensitive receptors due to the potential for adverse effects on these species from construction dust entering watercourses.</p> <p>All receptors included within the assessment should be agreed with relevant consultees, where possible.</p>
4.1.8	6.6.1 and 6.6.2	Construction Environmental Management Plan (CEMP) and Outline Environmental Management Plan (OEMP)	The Scoping Report indicates that construction vehicle and plant emissions are unlikely to be significant but does not provide data to support this conclusion. The ES should provide justification for this conclusion and fully describe all envisaged mitigation measures for the construction phase in the CEMP. Control measures and standard dust mitigation should be fully described within the OEMP. The ES

ID	Ref	Other points	Inspectorate's comments
			should explain how both the OEMP and the CEMP derived from the OEMP will be secured through the DCO or other legal mechanism.
4.1.9	N/A	Monitoring	Where the air quality assessment identifies the potential for likely significant air quality effects on receptors during construction and operation, the ES should explain the Applicant's provisions in relation to air quality monitoring and mitigation.

## 4.2 Cultural Heritage

(Scoping Report Section 7)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.2.1	n/a	n/a	No matters have been proposed to be scoped out of the assessment

ID	Ref	Other points	Inspectorate's comments
4.2.2	7.3	Study area	The proposed study area should be explained and fully justified in the ES. The extent of the study area should be agreed with relevant consultees, where possible.
4.2.3	7.3.1	Zone of Theoretical Visibility (ZTV)	The ZTV should be fully explained and justified in the ES with reference to the study area for designated and non-designated cultural heritage assets. The Scoping Report states that the ZTV will also consider physical and historical connectivity and relationships, changes to noise levels, air quality and traffic. The ES should make clear how these related aspects affect the cultural heritage assets and be cross referenced to other relevant ES chapters as necessary.
4.2.4	Figure 6, 7.4.3	Supporting figures/plans	The Scoping Report states there are six scheduled monuments identified in the study area and these are depicted on Figure 6. However, the number of layers make it difficult to discern where the scheduled monuments and other environmental features are located respectively to each other. The ES should provide figures which clearly show locations of designated and non-designated assets to differentiate these from other designations as this is currently unclear in Figures 4,5 and 6.

ID	Ref	Other points	Inspectorate's comments
4.2.5	7.5.2	Archaeological mitigation strategy – potential impacts	Potential impacts on the preservation potential of heritage assets due to changes in soil saturation and through water management should be considered in the ES. Where the assessment identifies the potential for likely significant effects on heritage assets, relevant mitigation measures should be set out and agreed with historic environment consultees, where possible.
4.2.6	7.7.3	Mitigation measures	<p>The Scoping Report states that mitigation measures will be developed as part of the design of the Proposed Development to limit any significant effects to designated assets. Mitigation measures should also be considered where likely adverse significant effects could arise from pre-construction, construction or operation stages on non-designated assets.</p> <p>All identified mitigation measures should be fully described in the ES and demonstrably secured.</p>
4.2.7	Figure 4	Archaeological Notification Areas	The Proposed Development crosses close to and through areas identified on Figure 4 as Archaeological Notification Areas. The ES should provide details as to what these areas are and assess the potential effects which the Proposed Development may have on them. Mitigation measures should be included and secured where necessary.
4.2.8	Figure 4	Historic Parkscales	Figure 4 shows the line of the Proposed Development passing through two areas adjacent to Walberton and Brookfield, which are identified as Historic Parkscales. The ES should provide details regarding the implications of this designation for the Proposed Development and include an assessment of effects on the Historic Parkscape as a result of the Proposed Development. The assessment should cross reference to the landscape and visual assessment where relevant.

ID	Ref	Other points	Inspectorate's comments
4.2.9	8.8.5	Photomontages	<p>The Scoping Report states that agreement will be sought on the locations for photomontages as visual representations of the Proposed Development. This agreement should include consultation with Historic England on which key locations would demonstrate the visual impact of the Proposed Development on the setting of all affected cultural heritage assets using verified photomontages in key locations.</p>

## 4.3 Landscape and Visual

(Scoping Report Section 8)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.3.1	8.5.7	Future maintenance activities.	The Inspectorate agrees that significant effects from future maintenance activities are unlikely to arise and this matter can be scoped out of the ES.
4.3.2	8.8.26	The night-time visual assessment will be undertaken for residents and recreational users within the SDNP. All other recreational users will be scoped out of the night-time assessment as they are not located within a designated 'Dark Sky' landscape.	The Inspectorate does not agree to scope this matter out. The ES should provide details of lighting which will be used both during construction and operation. The effects of any lighting to be used for the Proposed Development should be assessed for sensitive receptors which are located both inside and outside of the 'Dark Sky' landscape who may be impacted. Photomontages should be included where appropriate.

ID	Ref	Other points	Inspectorate's comments
4.3.3	8.1.5	Key professional standards and guidelines.	The ES should reference all of the relevant professional guidelines produced by the Landscape Institute – Visual Representation of Development Proposals (2019), Reviewing Landscape and Visual Impact Assessments (LVIAs) in addition to National Infrastructure Commission's Design Principles for National Infrastructure (2020).
4.3.4	Section 8.3	Study Area	The Scoping Report suggests a range of distances from the boundary of the Proposed Development to identify receptors, the Inspectorate considers that the study area should be informed by the type of visual receptors and the nature, extent and severity of likely impacts, with reference to the ZTV rather than setting specific distances for the assessment.

ID	Ref	Other points	Inspectorate's comments
			The study area should be agreed with relevant consultees and depicted on a plan in the ES.
4.3.5	8.4.36	Viewpoints	A record should be made of efforts which are made to agree viewpoint locations with relevant consultation bodies. The viewpoints used in the assessment should be depicted on supporting plans/ figures in the ES.
4.3.6	8.5.5	Assessment of structures	The ES should include details of the heights of new structures such as bridges, lighting columns and soil storage areas, and how they have been considered within the assessment.
4.3.7	8.5.8 – 8.5.9	Operation phase Year 15 assessment	As set out in paragraph 3.42 of DMRB LA107, the ES should assess the Operational Phase at Year 15 in the winter, as well as in the summer, reflecting the worst case scenario, when trees and landscape planting are not in leaf.
4.3.8	Section 8.6	Mitigation	The mitigation measures referred to in the Scoping Report should be described within the ES and appropriately secured through the DCO.
4.3.9	Table 9: Visual Receptors	Visual receptors	This list should be expanded to include recreational receptors and users of community facilities such as users of recreational facilities such as parks and playing fields; and users of libraries and community halls. Anglers should also be added to this list of receptors.
4.3.10	8.6.6	Tree removal and replacement	With reference to the proposed tree survey, the ES should explain the efforts made to retain any Category A and B trees identified within the survey (in particular any high value veteran and ancient trees/woodlands). Once designs of the scheme and construction methodologies have been finalised, an arboricultural method statement and a tree protection plan (TPP) should be included within, the ES. If the removal of trees from the order limits is required, a

ID	Ref	Other points	Inspectorate's comments
			tree removal plan should be provided and the ES should set out its strategy to mitigate for loss of existing trees during construction.
4.3.11	8.9.6	Hedgerow removal and replacement	The ES should provide details regarding the extent of hedgerow loss as a result of the Proposed Development. The strategy to mitigate for such loss e.g. replacement planting should be explained and secured in the dDCO, where relevant.
4.3.12	N/A	Construction compounds	The Scoping Report states that a main construction compound and satellite construction compounds will be required, but no further information regarding the locations or extent of the compounds is included. The Applicant should include information regarding the locations of all construction compounds in the ES and consider these as part of the LVIA. The LVIA should take into account the visual impact of the key construction traffic routes.
4.3.13	N/A	Monitoring arrangements	The ES should provide details of how replacement planting and landscaping will be monitored in the future to ensure its effectiveness as mitigation.

## 4.4 Biodiversity

(Scoping Report Section 9)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.4.1	9.4.14	Arable Weeds	<p>The Applicant has proposed to scope out surveys for arable weeds stating that there is already sufficient information to inform the ecological assessment. Previous surveys were carried out in 2017 but surveys of the western extent of the Proposed Development were not undertaken.</p> <p>The ES should include up to date survey information which covers the full extent of the Proposed Development and the relevant study area. In the absence of this information, the Inspectorate is unable to agree to scope this matter out.</p>

ID	Ref	Other points	Inspectorate's comments
4.4.2	2.3.7 9.3.7	Study Area	<p>Paragraph 2.3.7 states that the study area extends 20km from boundary of the Proposed Development for designated sites, however paragraph 9.3.3 states that a 30km extent will be used when assessing European sites designated for bat species. The extents of study areas used within the ES should be consistent to avoid confusion.</p> <p>The ES should provide justification for the zone of influence for watercourses, being limited to 2km from the Proposed Development.</p>
4.4.3	9.3.8	Study Area	The ES should provide justifications for the extents used for the study areas for individual species.
4.4.4	9.4.7 and Table 20	Notable habitats	It is not clear how the 'importance' rating associated with notable habitats, as identified in Table 20 have been defined. For example, coastal saltmarsh is identified as locally important and ancient

ID	Ref	Other points	Inspectorate's comments
			woodland and veteran trees are identified as nationally important. However, both habitats are shown as 'irreplaceable habitat' in the Annex 2 Glossary to National Planning Policy Framework. The ES should explain how the importance rating of notable habitats has been defined.
4.4.5	9.4.13	Baseline Conditions	<p>Given that a viaduct crossing with embankments is proposed for the River Arun it is unclear why a reduced level of survey effort is proposed in relation to the River Arun habitats and species on the basis that effects are indirect.</p> <p>The ES should provide details regarding the existing data which the Applicant has collated regarding the River Arun habitats and associated fauna, including fish, and provide further detailed assessment where likely significant effects are identified for the watercourse or adjacent habitats. Further survey effort should include ditches as well as the main River Arun.</p>
4.4.6	Table 19	Notable road verge site	It is unclear whether the notable road verge site is likely to be affected by the Proposed Development. The ES should provide further details regarding the site and its habitats where significant effects are likely.
4.4.7	Table 22	White clawed crayfish	It should be confirmed in the ES that surveys for aquatic invertebrates included white clawed crayfish, or demonstrated that that the need for such surveys can be ruled out.
4.4.8	9.5.3	Impacts on Arun Valley Special Protection Area (SPA) and Ramsar	The ES should provide the detail of the assessments that support the conclusion that habitats in proximity to the Proposed Development do not represent functionally linked land of the qualifying bird species of the Arun Valley SPA/Ramsar. Where possible, the Applicant should present evidence that this conclusion is agreed with Natural England.

ID	Ref	Other points	Inspectorate's comments
4.4.9	9.5.6	Impacts from new lighting	The Scoping Report recognises there may be impacts to sensitive receptors from lighting, yet this is not considered further. The ES should assess the proposed lighting to be used during construction and operation, and also assess the effects from the introduction of vehicle lights into an area which presently has very little lighting. The ES should ensure measures are taken to minimise impacts on sensitive ecological receptors.
4.4.10	9.7.1	Impacts on barn owl	The ES should assess impacts on barn owl during construction as well as operation and this should include impacts from habitat loss, disturbance, lighting, including lights from vehicles using the new road and vehicle strike.

## 4.5 Geology and Soils

(Scoping Report Section 10)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.5.1	10.8.5 / 5.7.14	An assessment of structural / engineering geology will be carried out separately to inform the design and development of the proposed scheme and will not be addressed further within the EIA.	The Inspectorate notes that a specific structural / engineering geology chapter is not currently proposed to be included in the ES, on the basis that this information will inform the design development. However, an assessment of sinkholes as a major event is proposed to be included within the ES. The applicant should include information on structural / engineering geology in the ES, where significant effects are likely to arise.
4.5.2	10.8.9	An assessment of effects on soil resources during operation.	The Inspectorate agrees to scope this matter out as the operation of the Proposed Development is not anticipated to result in further loss or impact on soil resources during operation.
4.5.3	10.8.12	Effects from land contamination on construction and maintenance workers during construction and maintenance.	The Inspectorate agrees to scope this matter out on the basis that workers will be protected from significant effects under Health and Safety Legislation during construction and maintenance phases. The OEMP should include relevant measures to address risks to workers arising from the findings of the ground investigation.

ID	Ref	Other points	Inspectorate's comments
4.5.4	Section 5 and Appendix B.	Unexploded ordnance	No assessment or reference is made to any preliminary assessment of Unexploded ordnance (UXO). The ES should consider the potential for UXO to be present and provide details of the results of any commissioned UXO assessment, where relevant.

ID	Ref	Other points	Inspectorate's comments
4.5.5	10.3.1	Study Area	<p>The ES should contain a figure depicting the 1km and 250m buffer zones for groundwater, surface water and potable water abstractions and geological and land contamination respectively.</p> <p>Figure 4 of the Scoping Report shows a number of historic landfills as being present within the full 1km search buffer however the assessment only considers those historic landfills within 250m. The presented figures, buffer zones and terminology should be consistent throughout.</p>
4.5.6	10.4.6	Baseline Conditions	<p>Chapter 10 of the Scoping Report states that a detailed review of the SDNP, Binsted Wood Complex Local Wildlife Site (LWS) and ancient woodland are presented in Chapter 9 of the ES. However, Chapter 9 does not contain information relating to an assessment of the impacts of potential contamination events on these sensitive receptors.</p> <p>The ES should include information explaining the potential impacts from contamination and the effects this may have on the sensitive receptors identified, cross references should be made between relevant chapters.</p>
4.5.7	10.4.21	Groundwater receptors including Secondary A and Secondary (undifferentiated) aquifers.	<p>The ES should include 'Principle aquifer within the White Chalk Subgroup' within the list of identified receptors.</p> <p>Paragraph 14.4.11 states that "<i>Whilst not directly encountered, piling for the structure across the River Arun floodplain may reach the Chalk bedrock geology, including the Culver Chalk Formation</i>" (part of the White Chalk Subgroup).</p> <p>The ES should assess the aquifer as a sensitive receptor where the piling design indicates that the aquifer may be impacted.</p>
4.5.8	10.4.23	Quaternary Deposits and Mineral Safeguarding Area	<p>A complex series of quaternary deposits have been identified within a Mineral Safeguarding Area (MSA). They are a source of aggregates, including sharp sand and gravel. The Scoping Report states these are</p>

ID	Ref	Other points	Inspectorate's comments
			discussed in Chapter 11; however, no further mention is made of either the quaternary deposits or the MSA. The ES should assess and report effects on these receptors from the Proposed Development and this should be contained in the relevant aspect chapter with appropriate cross referencing.
4.5.9	10.4.25	Baseline Conditions	<p>Paragraph 14.4.14 which states "<i>in some areas there is medium to high vulnerability largely associated with the Lambeth Group outcrop</i>" is not consistent with paragraph 10.4.8, which states "<i>In the southern edge of the study area, where superficial deposits directly overlie the chalk, the vulnerability is shown as medium to medium-high.</i>"</p> <p>The ES should ensure the reporting of groundwater vulnerability is consistent throughout the ES and ensure that the relevant sensitive receptors are fully assessed.</p>
4.5.10	10.6.2	Ground Investigations	It is recommended that the scope of ground investigation work (to include consideration of soil, groundwater, ground gas and geotechnical parameters) should be agreed with the local authorities and the Environment Agency.
4.5.11	10.8.7	Soil Resources	The Scoping Report has identified the potential for impacts on soil quality. The ES should explain how impacts to soil will be managed. The Applicant may wish to consider preparation of a Soils Management Plan (SMP) to support the assessment in the ES to ensure delivery of measures necessary to protect this valuable environmental resource.
4.5.12	N/A	Operational phase mitigation	The ES should include any permanent mitigation and environmental enhancement measures that will be incorporated into the design of the Proposed Development. These should be detailed within the ES, along with an explanation as to how such measures are to be secured.

## 4.6 Material Assets and Waste

(Scoping Report Section 11)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.6.1	11.5.2	Potential impacts on material assets and waste during operation of the Proposed Development.	The Inspectorate agrees that an assessment of waste produced during operation can be scoped out due to the material use and waste arising from maintenance activities being expected to be generally the same (in both type and quantity) to that generated by the existing road network, and the wastes will be managed using established procedures and facilities that are used across the county and region
4.6.2	11.9.3	Waste arising from extraction, processing and manufacture of construction components and products.	The Inspectorate agrees that this matter can be scoped out as the sites where products and materials are produced will have their own waste management plans and will be out of control of the Applicant.
4.6.3	11.9.3	The environmental impact of waste management at established third party waste management facilities will be scoped out of the assessment.	The Inspectorate agrees that this matter can be scoped out as these facilities will be operating under the relevant planning and permitting authorisations and will therefore have been subject to site specific assessments.

ID	Ref	Other points	Inspectorate's comments
4.6.4	11.6.4	Mitigation Measures	The Scoping Report states that mitigation measures will be included within a CEMP/OEMP, the ES should explain who will be responsible for implementing the mitigation measures and how the final CEMP will be secured.

ID	Ref	Other points	Inspectorate's comments
4.6.5	Table 35	Waste types	It is noted that the types and volumes of waste is not yet known. The ES should specify this information in the assessment. Appropriate cross-referencing to the Geology and Soils aspect chapter should be included, noting the potential for contaminated land within the vicinity of the Proposed Development.

## 4.7 Noise and Vibration

(Scoping Report Section 12)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.7.1	12.5.6	Operational vibration effects.	The Inspectorate agrees that significant vibration effects during operation are unlikely to arise and this matter can be scoped out of the ES.

ID	Ref	Other points	Inspectorate's comments
4.7.2	12.1.3	Cross references to other aspect chapters	The Scoping Report states that impacts from noise on tranquillity, human health, cultural heritage and ecologically sensitive receptors are considered in their own relevant aspect chapters. However, adverse effects from noise are only discussed in Chapter 9: Biodiversity.  The ES must ensure that impacts from noise are assessed and reported appropriately for all relevant aspects, with the use of cross referencing where necessary.
4.7.3	12.3	Study Area	The ES should include a plan which depicts the study area for the construction and operational assessments and should also show the study area for the Affected Road Network, including haul roads and location of construction compounds.
4.7.4	12.5.2	Piling locations	The ES should explain where piling is likely to be required, this may be supported by figure(s), where appropriate.
4.7.5	12.5.2	Receptors	The ES should assess impacts from vibration during the construction phase on ecological receptors, including aquatic receptors.

ID	Ref	Other points	Inspectorate's comments
4.7.6	12.6.2	Mitigation measures	Noise barriers are listed as noise mitigation. The assumed effectiveness of noise barriers should be explained within the assessment and factored into noise modelling. Any inter-relationships with other chapters such as the landscape and visual assessment or ecological assessment should also be considered.
4.7.7	12.7.1	Significant effects	The Scoping Report identifies two properties which have the potential to qualify for a scheme of sound insulation. The ES should report the location of all receptors which will experience adverse effects from noise during operation. Reasoning as to why mitigation measures are unable to prevent significant adverse effects on these two properties should be explained.
4.7.8	12.8.2	Diversion routes	The ES should describe any diversion routes which would be required during construction, and to aid the readers understanding, include a map/ figure of the potential diversion routes.
4.7.9	N/A	Working hours	The ES should contain details regarding working hours, and any planned night time working. The Applicant should discuss and agree with the LPA whether night-time noise limits are required. It should be clear in the ES how such limits would be secured and implemented, whether through the DCO or other means.

## 4.8 Population and Human Health

(Scoping Report Section 13)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.8.1	n/a	n/a	No matters have been proposed to be scoped out of the assessment

ID	Ref	Other points	Inspectorate's comments
4.8.2	13.3.1	Study Area	The Scoping Report states that the study area will vary depending on the effect and the type of resource that is being assessed. The ES should clearly explain and justify the study areas shown for each type of resource which is being assessed and be depicted on a plan. The study area should also include resources which are located near to construction compounds and transport routes which are to be used during construction.
4.8.3	13.4.15	Severance Issues	The ES should assess the impacts during construction and operation of potential severance issues for farmers and other landowners. Measures should be included within the dDCO to ensure farmers and other landowners ability to access and move their livestock and ability to access their land is not hindered. The ES should assess severance issues as a result of the Proposed Development on the function of local settlements and their ability to act as cohesive communities.
4.8.4	13.4.16	Farm Survey	The Scoping Report identifies five farm businesses and other land used for farming which would be crossed by the Proposed Development. No information is provided regarding the total area of land take or the impact on the future operations of each farm business. This information should be included within the ES.
4.8.5	13.4.17	PRoW	The effects of any permanent or temporary diversions to PRoW or routes used by walkers, cyclists and horse-riders, should be assessed

ID	Ref	Other points	Inspectorate's comments
			and reported in the ES. Details should be included as to the duration and proposed length of any diversion routes.
4.8.6	13.4.18	Surveys	Details of the methodology, location and timespan of the proposed Walkers, Cyclists and Horse Riders Assessment and Review (WCHAR) surveys should be included within the ES.
4.8.7	13.6.4	Mitigation and enhancement	<p>The Scoping Report does not discuss any specific mitigation measures with regards to population and human health as these will be developed as the Proposed Development progresses. The ES should explain and justify mitigation measures which will be used to reduce adverse effects and how they will be secured.</p> <p>The Scoping Report states that there are opportunities to improve provision for walkers, cyclists and horse riders. Opportunities should be explained fully in the ES and include how such enhancements would be secured.</p>
4.8.8	13.9.3	Reliance upon other Assessments	The Scoping Report states that the assessment for population and human health will rely on other assessments of the ES, notably noise and air quality. The ES should explain, using cross reference where necessary which parts of other assessments have been used to identify likely significant effects on population and human health.
4.8.9	N/A	Impacts from light	The ES should include an assessment of the impacts which new lighting from a dual carriageway road will have upon human receptors. This should include lighting from lighting columns and from vehicle headlights.

## 4.9 Road Drainage and the Water Environment

(Scoping Report Section 14)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.9.1	14.4.21	Reservoir flood risk	The Scoping Reports states that no reservoir flood risk is shown in the study area outside of the River Arun channel as indicated by the Environment Agency (EA) flood maps and it is therefore proposed that this can be scoped out from further assessment in the EIA. The Planning Inspectorate agree that this matter can be scoped out on this basis.

ID	Ref	Other points	Inspectorate's comments
4.9.2	14.4.9	Pond features	Several pond features are located in the study area and are likely to have hydraulic connectivity to the underlying aquifer or are connected to the River Arun floodplain drains and watercourses. The ES should identify these pond features, supported by figures as necessary. The ES should assess how any hydraulic connectivity from these ponds may affect the aquifer or watercourses, should a significant effect from the Proposed Development be identified, such as surface water run-off. Any assessment of water quality should also include these ponds and this should be cross-referenced to the ES chapter considering biodiversity.
4.9.3	14.4.11 14.6.1	Aquifers and Source Protection Zones (SPZs)	As highlighted under the Geology and Soils section above, the Scoping Report suggests that piling for the structure across the River Arun floodplain may reach the chalk bedrock geology, including the Culver Chalk Formation. Piling risk assessments and piling methods to minimise ground disturbance and creation of preferential pathways are proposed. As the Chalk Formations are classified by the EA as a Principal Aquifer, and the Lambeth Group as a Secondary A aquifer

ID	Ref	Other points	Inspectorate's comments
			<p>the Applicant should assess the likely effects of piling and any other works which may affect the aquifers, in consultation with the EA.</p> <p>The presence of the SPZs and a number of other licenced abstractions in the study area shows that groundwater within the vicinity of the Proposed Development will need to be protected and the ES will need to demonstrate that the effects of piling and any other construction or operational impacts will not be a risk to water quality. The ES should also describe in detail any necessary mitigation, in consultation with the EA, and other relevant consultation bodies, in order to protect vulnerable groundwater resources.</p> <p>The potential for contamination of surface water and groundwater through runoff from the roads and any hard standings (eg through fuel and oil spillages) or potential disturbance of soil or land that may be contaminated should be addressed in the assessment of likely effects during construction and operation on water quality from the Proposed Development. The assessment should be based on relevant Foundations and Drainage Risk Assessments as advised by the EA. The ES should describe any necessary mitigation, in consultation with the EA and other consultation bodies.</p> <p>The assessment should cross refer to the Geology and Soils chapter in the ES.</p>
4.9.4	14.6	Flood storage compensation	<p>Any areas which are proposed for flood storage compensation, where levels are raised or structures introduced into the floodplain, should be identified in the ES following consultation with the EA.</p>

## 4.10 Climate

(Scoping Report Section 15)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.10.1	15.5.5	Decommissioning	<p>The Scoping Report anticipates that the Proposed Development will be in use beyond the design life of the road infrastructure. The Scoping Report states that "<i>any future decommissioning would require a separate planning submission</i>" and has therefore been scoped out.</p> <p>The Planning Inspectorate agrees that this matter can be scoped out from the EIA based on the nature of the Proposed Development and its proposed operational lifespan but reasons for this should be clearly set out in the final ES.</p>
4.10.2	15.9.3	Greenhouse Gas (GHG) emissions – end of life stage	<p>GHG emissions from the end of life stage of the Proposed Development have been scoped out of the assessment due to its anticipated operational length.</p> <p>The Planning Inspectorate agrees that this matter can be scoped out from the EIA based on the nature of the Proposed Development and its proposed operational lifespan but reasons for this should be clearly set out in the final ES.</p>
4.10.3	15.4.8 Table 57	Climatic parameters for assessment of vulnerability - wind	<p>The Scoping Report states that impacts of wind on receptors in the surrounding environment are likely to be no worse relative to baseline conditions, based on UKCP18 advice. The Planning Inspectorate agrees that this matter can be scoped out on this basis.</p>

ID	Ref	Other points	Inspectorate's comments
4.10.4	15.3.2	Climate Change Vulnerability Review	The Scoping Report states that the review will " <i>captures all assets, infrastructure and users associated with the proposed scheme, including all temporary works</i> ". The ES should explain exactly what/whom the assets; infrastructure and users are which are referred to.
4.10.5	15.4.10	Flood risk – climate change allowances for peak river flow	Updated climate change allowances for peak river flow in 2021 based on UKCP18 projections should be used to inform the Flood Risk Assessment (FRA) in support of the assessment of effects of flood risk from the Proposed Development, in consultation with the EA.
4.10.6	15.7.3	Measures to reduce GHG emissions	Any measures applied to reduce GHG emissions should be clearly set out in the ES and how these would be secured through the DCO process should be clearly explained.
4.10.7	Table 15.8	UK Sixth Carbon Budget	The UK's sixth carbon budget should be referred to in the ES where appropriate in the assessment of the significance of effects made by comparing estimated GHG emissions arising from the Proposed Development with UK carbon budgets, and the associated reduction targets.
4.10.8	15.8.10 15.9.2	Professional judgement	Where professional judgement is used in the assessment this should be made clear in the ES and the professional expertise and relative qualifications of the assessors should be cited.

## 4.11 Cumulative

(Scoping Report Section 16)

ID	Ref	Applicant's proposed matters to scope out	Inspectorate's comments
4.11.1	n/a	n/a	No matters are proposed to be scoped out of the assessment

ID	Ref	Other points	Inspectorate's comments
4.11.2	16.3.1	Study Area	The ES should set out and justify the geographical extent of the Zone of Influence and how this has been used to identify other plans or projects on an aspect specific basis to derive the long and short lists of projects.

## 5. INFORMATION SOURCES

5.0.1 The Inspectorate's National Infrastructure Planning website includes links to a range of advice regarding the making of applications and environmental procedures, these include:

- Pre-application prospectus<sup>5</sup>
- Planning Inspectorate advice notes<sup>6</sup>:
  - Advice Note Three: EIA Notification and Consultation;
  - Advice Note Four: Section 52: Obtaining information about interests in land (Planning Act 2008);
  - Advice Note Five: Section 53: Rights of Entry (Planning Act 2008);
  - Advice Note Seven: Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements;
  - Advice Note Nine: Using the 'Rochdale Envelope';
  - Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects (includes discussion of Evidence Plan process);
  - Advice Note Twelve: Transboundary Impacts;
  - Advice Note Seventeen: Cumulative Effects Assessment; and
  - Advice Note Eighteen: The Water Framework Directive.

5.0.2 Applicants are also advised to review the list of information required to be submitted within an application for Development as set out in The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009.

---

<sup>5</sup> The Planning Inspectorate's pre-application services for applicants. Available from: <https://infrastructure.planninginspectorate.gov.uk/application-process/pre-application-service-for-applicants/>

<sup>6</sup> The Planning Inspectorate's series of advice notes in relation to the Planning Act 2008 process. Available from: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>



## APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

**TABLE A1: PRESCRIBED CONSULTATION BODIES<sup>7</sup>**

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Clinical Commissioning Group	NHS West Sussex CCG
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England
The relevant fire and rescue authority	West Sussex Fire and Rescue
The relevant police and crime commissioner	Sussex Police
The relevant parish council(s)	Walberton Parish Council
	Slindon Parish Council
	Arundel Town Council
	Lyminster and Crossbush Parish Council
The Environment Agency	The Environment Agency
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	West Sussex County Council
The relevant strategic highways company	Highways England - South East
The relevant internal drainage board	River Arun (co EA)
The Canal and River Trust	The Canal and River Trust

<sup>7</sup> Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (the 'APFP Regulations')

<b>SCHEDULE 1 DESCRIPTION</b>	<b>ORGANISATION</b>
Public Health England, an executive agency of the Department of Health	Public Health England
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission	Forestry Commission South East and London

**TABLE A2: RELEVANT STATUTORY UNDERTAKERS<sup>8</sup>**

<b>STATUTORY UNDERTAKER</b>	<b>ORGANISATION</b>
The relevant Clinical Commissioning Group	NHS West Sussex CCG
The National Health Service Commissioning Board	NHS England
The relevant NHS Foundation Trust	Arundel and District Hospital (Sussex Community NHS Foundation Trust)
	South East Coast Ambulance Service NHS Foundation Trust
Canal Or Inland Navigation Authorities	The Canal and River Trust
Civil Aviation Authority	Civil Aviation Authority
Universal Service Provider	Royal Mail Group
Homes and Communities Agency	Homes England
The relevant Environment Agency	The Environment Agency
The relevant water and sewage undertaker	Southern Water
The relevant public gas transporter	Cadent Gas Limited
	Last Mile Gas Ltd
	Energy Assets Pipelines Limited

<sup>8</sup> 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (PA2008)

STATUTORY UNDERTAKER	ORGANISATION
	ES Pipelines Ltd
	ESP Networks Ltd
	ESP Pipelines Ltd
	ESP Connections Ltd
	Fulcrum Pipelines Limited
	Harlaxton Gas Networks Limited
	GTC Pipelines Limited
	Independent Pipelines Limited
	Indigo Pipelines Limited
	Murphy Gas Networks limited
	Quadrant Pipelines Limited
	National Grid Gas Plc
	Scotland Gas Networks Plc
	Southern Gas Networks Plc
The relevant electricity distributor with CPO Powers	Eclipse Power Network Limited
	Last Mile Electricity Ltd
	Energy Assets Networks Limited
	ESP Electricity Limited
	Fulcrum Electricity Assets Limited
	Harlaxton Energy Networks Limited
	Independent Power Networks Limited
	Leep Electricity Networks Limited
	Murphy Power Distribution Limited
	The Electricity Network Company Limited
	UK Power Distribution Limited

STATUTORY UNDERTAKER	ORGANISATION
	Forbury Assets Limited
	Indigo Power Limited
	Utility Assets Limited
	Vattenfall Networks Limited
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc

**TABLE A3: SECTION 43 LOCAL AUTHORITIES (FOR THE PURPOSES OF SECTION 42(1)(B))<sup>9</sup>**

LOCAL AUTHORITY <sup>10</sup>
Arun District Council
Adur District Council
Chichester District Council
City of Brighton and Hove
East Sussex County Council
Hampshire County Council
Horsham District Council
South Downs National Park
Surrey County Council
West Sussex County Council
Worthing District Council

<sup>9</sup> Sections 43 and 42(B) of the PA2008

<sup>10</sup> As defined in Section 43(3) of the PA2008

## APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

<b>CONSULTATION BODIES WHO REPLIED BY THE STATUTORY DEADLINE:</b>
Adur and Worthing District Council
Arun District Council
Environment Agency
Forestry Commission
Health and Safety Executive
Highways England
Historic England
Horsham District Council
Natural England
Public Health England
Royal Mail
Slindon Parish Council
South Downs National Park Authority
Surrey County Council
Sussex Community NHS Foundation Trust
Walberton Parish Council
West Sussex County Council

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Subject:** TRO 10045 A27 Bypass Notification  
**Date:** 23 March 2021 10:16:05

---

Dear Madam,

I can confirm that Adur and Worthing have no comments to make on the Scoping request in relation to the A27.

Regards James

**James Appleton**

Head of Planning and Development, Adur & Worthing Councils

Phone: [REDACTED]

Email: [REDACTED] [@adur-worthing.gov.uk](mailto:[REDACTED]@adur-worthing.gov.uk)

Website: [www.adur-worthing.gov.uk](http://www.adur-worthing.gov.uk)

Address: Economy, Portland House

Richmond Road

Worthing

West Sussex



This email and any attachments are confidential and intended solely for the persons addressed. If it has come to you in error please send it back to us, and immediately and permanently delete it. Do not use, copy or disclose the information contained in this message or in any attachment. Whilst every care has been taken to check this e-mail for viruses, it is your responsibility to carry out checks upon receipt.

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Subject:** Scoping Response  
**Date:** 01 April 2021 13:58:57  
**Attachments:** [image001.jpg](#)  
[image003.jpg](#)  
[image005.jpg](#)  
[image007.jpg](#)  
[image002.jpg](#)  
[image004.jpg](#)  
[image006.jpg](#)  
[image008.jpg](#)  
[image009.png](#)

---

Dear Ms Wilkinson,

I write in response to your letter dated 4 March 2021 and I make the following comments on behalf of Arun District Council in response to the Scoping Consultation.

### **Flood Risk & Drainage**

- The scheme should take account of the influence(s) that the new road, its corridor and construction impacts would have on groundwater – particularly but not exclusively, in terms of existing flow paths.
- Diverting flows (in aquifers or watercourses) may impact existing watercourses and any restriction of flow (damming) could increase flood risk on the upstream side and depletion of flow on the downstream (effects on abstraction points).
- There are source protection zones along the route which would need to be accounted for and measures taken to avoid contamination or fluctuation of resource availability.
- There is a general line of springs along the existing A27 route.
- Dealing with surface water run-off should be dealt with as local to the point of impact as possible – translocation of water to adjacent rife and stream catchments may have an effect on water chemistry of the receiving watercourse.
- Ideally, the run-off should be subject to the same hierarchy that we deal with surface water on normal developments – i.e. first infiltrate, followed by controlled discharge to watercourse and then controlled discharge to a sewer/drain. I assume that Highways England will have guidelines for storm intensity etc. to be dealt with in highway situations, so our current guide of 100 year + 40% climate change may not be applicable but this should be taken as a starting point for assessing allowable discharges.

Whilst these issues relate to the road and its construction, the matter of mitigation measures must also be borne in mind and all of the above may be relevant in that respect.

Works to watercourses will require either Consent (from Arun having delegation from WSCC as LLFA) or an Activity Permit (from the EA if the watercourse is designated Main River). Criteria for these 'permissions' should be ascertained from the relevant authorities.

Suitable treatment of run-off prior to discharge is essential if downstream pollution is to be avoided. Retention / detention ponds should be designed to be safe and sufficient.

Long-term borehole monitoring is essential if an understanding of groundwater in the area is to be fully understood and accounted for. I understand that this is being initiated within the Ground Investigations currently getting underway. I understand that some prior 'snapshot' monitoring has been undertaken but it is essential that continuous pan-season

monitoring is undertaken.

There are series of limestone solution features (dolines) in the Fontwell area – these should be identified and assessed for how the new road might impact upon them (or vice versa).

The Environment Agency will be best placed to comment upon flood risk in the River Arun corridor. Road proposals should complement efforts of flood risk reduction in the short, medium and long term. The overall impacts of the choice between embankment or viaduct for the river crossing should take account of tidal, fluvial and pluvial risk (and in combination).

We are aware that the cabling from the proposed Rampion Windfarm extension will cross the new road before its connection point with the National Grid at Bolney. It would be sensible for the promoting authorities to liaise and agree mutual arrangements re ducting provision etc.

Network Rail and Littlehampton Harbour Board must be consulted. The former in respect of the rail crossing and the latter for underbridge clearances etc as the river is within Harbour limits up to the Queen Street bridge in Arundel. I understand that the Harbour Board is in discussion with the delivery team to maximise the beneficial use of the river/harbour during the construction phase – this is to be applauded.

### **Landscape**

In general the report has covered in depth the obvious and main points which we would be requiring to have included within the scoping report. Sections 8-9 have provided a good level of detail re content, methodology potential effects and mitigation. The hydrology aspect we will leave to engineers to comment.

The benefits of the scheme will inevitably come at some environmental cost, which the Environmental Impact Assessment will seek to highlight.

Arun will be looking for assurances from the scoping report to address in particular;

- Habitat protection particularly any interface with Ancient woodland. Appreciation of the legacy of any physical attributes ie Trees/ancient hedgerows.
- Mitigation for landscape/habitat loss. Net gain or betterment in the proposed scheme. Unavoidable tree loss to be addressed with new planting which over time will be required to improve the diversity and resilience of the local tree population, considering climate change and new and emerging threats from pests and diseases impacting our trees. The opportunity to introduce genetic diversity within the mitigation plans, which may help to increase climate resilience in the long term.
- Visual impact to the wider surrounds, landform and visual character. Impact on the SDNP to the north and impact on local areas of special landscape character. Impact on existing settlements and the necessary mitigation, to also include visual impact of mitigation associated with any noise barriers deemed to be required.
- Landscape creation, habitat replacement, landscape severance and connectivity across the A27 to be considered and addressed within the schemes mitigation proposals.
- The effect of the proposals on Arun's evolving landscape and the interface with planned and known upcoming development in this area.

The above whilst not exhaustive would be points of significant landscape impact that we

would be looking for the report to address.

## General Issues

- Heritage and Conservation - impact on setting of CA, listed buildings and on ancient monuments and archaeology, non-designated assets and impact on the setting of Arundel.
- Biodiversity and habitats - designated national and local habitats rare species (Bats) and the broader Biodiversity Opportunity Areas and Pagham Harbour SPA and Arun Valley SPA/SAC.
- Impacts on the landscape - sensitivity of the South Downs National Park as well as its setting - light (night skies), noise and vibration pollution as well as dust, emissions and air quality, carbon reduction and modal shift and renewable energy sources.
- Sustainable construction and sourcing and transport of materials.
- Rights of way, severance of communities and access for Non-Motorised Users , disability (all users) and wildlife and Green Infrastructure networks/corridors.

Regards, Neil

### Neil Crowther

Group Head of Planning

T: [REDACTED]

E: [REDACTED]@arun.gov.uk

Arun District Council, Civic Centre, Maltravers Rd, Littlehampton, West Sussex, BN17 5LF

[www.arun.gov.uk](http://www.arun.gov.uk)

Sign up to our newsletter [here](#)

To register to receive notification of planning applications in your area please go to [www.arun.gov.uk/planning](http://www.arun.gov.uk/planning)

**Essential maintenance is being carried out to the planning, building control and local land charges database during the week commencing 12 April 2021. During this time there will be no public or staff access to any records held within this database, and it will not be possible to carry out any of the following tasks via the Arun website:**

- **Research planning and building control history**
- **View any planning applications, plans, agreements, tree preservation orders or competent persons data**
- **Submit building control applications**
- **Submit planning application comments**
- **Report any planning compliance issues**

**The publicity and consultation period for all planning applications that fall over this week will be extended by a further week to ensure no one is disadvantaged.**

**All other aspects of planning, building control and local land charges will be limited during this week and you are strongly advised to contact the individual departments before 12 April 2021 for specific restrictions during this time.**

DX 57406 Littlehampton

You can view Arun District Council's Privacy Policy from <https://www.arun.gov.uk/privacy-policy>

Important Notice This e-mail is intended exclusively for the addressee and may contain information that is confidential and/or privileged. If you are not the intended recipient (or authorised to receive it for the addressee), please notify the sender and delete the e-mail immediately; using, copying, or disclosing it to anyone else, is strictly prohibited and may be unlawful. Any views, opinions or options presented are solely those of the author and do not necessarily represent those of Arun District Council. The information in this e-mail may be subject to public disclosure under the Freedom of Information Act 2000, therefore we cannot guarantee that we will not provide the whole or part of this e-mail to a third party. The Council reserves the right to monitor e-mails in accordance with relevant legislation. Whilst outgoing e-mails are checked for viruses, we cannot guarantee this e-mail is virus-free or has not been intercepted or changed and we do not accept liability for any damage caused. Any reference to "e-mail" in this disclaimer includes any attachments.

\*\*\*\*\*

FAO Karen Wilkinson  
Environmental Services  
Central Operations  
Temple Quay House  
2 The Square  
Bristol  
BS1 6PN

**Our ref:** HA/2021/123024/01-L01  
**Your ref:** TR010045-000009  
**Date:** 30 March 2021

Dear Karen

**PLANNING ACT 2008 (AS AMENDED) AND THE INFRASTRUCTURE PLANNING  
(ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017(THE EIA  
REGULATIONS) – REGULATIONS 10 AND 11**

**APPLICATION BY HIGHWAYS ENGLAND (THE APPLICANT) FOR AN ORDER  
GRANTING DEVELOPMENT CONSENT FOR THE A27 ARUNDEL BYPASS (THE  
PROPOSED DEVELOPMENT)**

**SCOPING CONSULTATION AND NOTIFICATION OF THE APPLICANT'S CONTACT  
DETAILS AND DUTY TO MAKE AVAILABLE INFORMATION TO THE APPLICANT  
IF REQUESTED**

Thank you for consulting the Environment Agency on the above EIA Scoping Report. Overall, we are generally pleased with the scope of the report and the range of topics that are proposed to be included within the Environmental Statement.

As detailed in the Defra Single Voice letter dated 13 August 2019, our overriding concern relates to the design option chosen, which has not yet been decided. As previously outlined, an embankment option would have serious and significant negative impacts on hydrology, biodiversity, landscape and cultural heritage.

Our detailed comments on the EIA Scoping Report are outlined below:

**CHAPTER 2 THE PROPOSED SCHEME**

Page 8, Section 2.2. We would suggest that one of the scheme objectives should be relating to flood risk i.e. to ensure that the scheme will be safe for its lifetime without increasing flood risk elsewhere and where possible reducing flood risk overall.

## **CHAPTER 6 AIR QUALITY**

Page 51 Sensitive receptor selection. Construction dust entering watercourses can have an adverse effect on aquatic ecology. Fish and other aquatic organisms should be included as a sensitive receptor.

## **CHAPTER 8 LANDSCAPE AND VISUAL**

Page 72, Section 8.4.39. Table 9 Visual Receptors. We would suggest that anglers should be included as a visual receptor group under Recreational Users.

## **CHAPTER 9 BIODIVERSITY**

This is a large-scale development and ecological enhancements should be an intrinsic part of the plans, with the aim to conserve and enhance the natural and local environment by minimising impacts on biodiversity and providing biodiversity net gain. Ecological enhancements are improvements over and above impact avoidance and mitigation and this needs to be reflected in the Environmental Statement. It should also include future site management of retained and created habitats, for the benefit of wildlife, and details of proposed post-development management and monitoring.

It is noted that a separate Habitats Regulations Assessment (HRA) will be undertaken, as well as a standalone Water Framework Directive Report. We are supportive of the proposed Dedicated Habitat Management Plan and Environmental Master Plan, which will detail the Environmental Mitigation features in the proposed design. We note that floodplain compensation, landscape creation and habitat replacement are to be defined further in the Environmental Statement as the final design is confirmed. It is important that the scheme is designed to ensure connectivity of habitat for terrestrial species, and the location and design of Green Bridges needs careful consideration.

The largest area of concern to biodiversity from the Environment Agency is the proposed 1.5km crossing of the floodplain and main River Arun as well as associated smaller ditches and wetland areas. It is still undecided what form this crossing will take, which obviously has significant influence upon the level of impact to protected species and habitats within the river corridor and surrounding area.

Page 88, section 9.3.6. We are pleased to see that defining the zone of influence with regards to potential ecology and nature conservation impacts will be an iterative process. This is particularly important as the detailed design of the scheme is progressed.

Page 92, Table 20. We would have expected 'coastal saltmarsh' to have been classified as 'National' importance in the table given that saltmarsh is regarded as an Irreplaceable Habitat in the Annex 2 Glossary to the NPPF (along with ancient woodland and veteran trees which are cited as National importance in this table).

Page 93, Table 21. Aquatic Ecology is described as "of limited diversity, supporting small numbers of priority species...". Whilst this may be true of the minor ditches within the scheme footprint, it should be noted that the ditches will contain the protected European Eel. The main river (although not surveyed and described as a 'marine environment') is known to receive seasonal migrations of Sea Trout, Eels and Sea Lamprey, all species of conservation importance. Although fish are not considered to be directly impacted by the scheme, this may be dependent on the type of crossing proposed. There is also the potential for fish in the ditches and the main River Arun to

be indirectly impacted and if piling is required in proximity to the river and ditches then vibration impacts should be considered. These are not mentioned and are scoped out of the Vibration Assessment. We would recommend that fisheries both within the ditches and the main River Arun are scoped into the Environmental Statement.

Table 21 also mentions that 'ditches .... are known to provide habitat for water vole'. This should more accurately state that water voles are known to exist within the scheme footprint and the local area.

Page 95, Table 22. Consideration needs to be given to what fisheries information is available for the main River Arun (given the above comments) and whether further survey information is required.

Page 97, section 9.5.5. There is no reference in here to the indirect impacts of construction activity on biodiversity such as construction noise, vibration and construction dust. There is the potential for vibration to impact fisheries during construction which has not been identified.

Page 97, section 9.5.6. During operation, depending on the detailed design of the scheme, there is also the potential for significant impact to biodiversity due to loss and severance of habitats within the river corridor.

## **CHAPTER 10 GEOLOGY AND SOILS**

This road scheme is predominately underlain by the London Clay and Lambeth Group bedrock (designated as unproductive and secondary A aquifers respectively). The majority of the site is underlain by a significant thickness of superficial deposits which are designated as secondary aquifers. Shallow groundwater is present across a large part of the scheme and so groundwater is very sensitive to contamination and needs to be protected. The scheme crosses a number of areas where current or historic land uses pose a risk of legacy ground contamination including historic landfills.

Construction works for new highways can pose a risk to groundwater resources by mobilising any contaminants in the ground and creating new pathways for pollutants.

We support the consideration of the potential effects on bedrock and superficial geology and the risks from contamination on controlled waters. Chapter 10 highlights the need to assess baseline conditions and identify potential sources of land contamination.

There are a number of current and historic land uses identified and these are summarised in Table 26. We support the need for intrusive site investigations in these locations and that remedial works may be required to mitigate against the risks to ground and surface waters from contamination during the construction and operational phases of the development (section 10.5.4 and 10.5.6).

The proposed scheme does not pass through any Source Protection Zones (SPZs), however the western section, where it joins the exiting A27, is close to the SPZ for Fontwell. Section 10.4.21 states that groundwater receptors are identified as secondary A and secondary (undifferentiated) aquifers. We would like to highlight the potential for these deposits to be in hydraulic continuity with the underlying chalk in some areas of the proposed scheme. The chalk is designated a principal aquifer and provides a valuable water resource at a strategic level both in terms of drinking water supply but also base flow to rivers and streams. There are a number of surface water receptors identified and it is likely that shallow groundwater will be in hydraulic continuity with these surface water features.

## **CHAPTER 12 NOISE AND VIBRATION**

Fish are sensitive to vibration impacts from construction activities (such as piling) and we could not see them identified as a sensitive receptor in this chapter (nor elsewhere in the document). Page 147 in this chapter references human receptors and impact on building structures only. Furthermore, the whole chapter does not consider noise and vibration impacts on wider ecological receptors in the river corridor. We therefore suggest that this needs to be scoped into the EIA process.

## **CHAPTER 13 POPULATION AND HUMAN HEALTH**

Page 155, section 13.1.1. Anglers should be included under the Land Use and Accessibility bullet and impact upon anglers and this recreational pursuit considered in subsequent sections.

## **CHAPTER 14 ROAD DRAINAGE AND THE WATER ENVIRONMENT**

Highways pose a risk to the water environment through the introduction of new and / or increased discharges from highway runoff to watercourses or groundwater. Highway runoff can contain metals, hydrocarbons and sediment, which without adequate pollution prevention measures, can result in pollution of the water environment.

In line paragraph 109 of the NPPF, which states that development must not result in unacceptable levels of water pollution, the drainage systems for the bypass will need to be designed to fully address pollution risks, including maintenance. This should include identifying opportunities for improving existing systems on the road network. We recommend prioritising vegetated drainage systems in early thinking about drainage solutions, maximising the opportunities for multiple benefits for surface water management, pollution prevention, biodiversity, and landscape.

Page 173, Section 14.4.1. Please note that the updated baseline model must be 'signed off' by the Environment Agency before post-development runs are submitted.

Page 174, Section 14.4.11 states that piling for the structure across the River Arun floodplain may reach the underlying chalk bedrock. We would require a Foundations Risk Assessment to ensure that any piling carried out in any part of this scheme does not risk mobilising contamination and acting as a pathway for it to enter groundwater. In addition a robust discovery strategy will be required for any previously unknown contamination identified during the construction of the scheme.

Page 175 & 176, Section 14.4.17. The site also covers Flood Zone 3b (functional floodplain). The NPPF and associated Practice Guidance makes it clear that essential infrastructure located within Flood Zone 3b must:

- remain operational and safe for users in times of flood;
- result in no net loss of floodplain storage;
- not impede water flows and not increase flood risk elsewhere.

We support the proposals in Section 14.4.24 (Page 176) for groundwater level and quality monitoring to be undertaken to support the wider ground investigations. Shallow groundwater is likely in several parts of this scheme and if dewatering is necessary a permit may be required.

A Drainage Risk Assessment will be required to demonstrate that the risk of contaminants entering groundwater have been mitigated against. The Ciria SuDs manual C753 has industry best practice. It provides information and guidance on risk assessment and the likely level of treatment. <http://www.susdrain.org/>.

The surface geology in some parts of the scheme is likely to comprise low permeability deposits where infiltration is likely to be slow. The Environment Agency will only agree to the use of deep infiltration system for surface water or sewage effluent disposal if the developer can show that all of the following apply:

- The discharge to groundwater is indirect (with the exception of clean uncontaminated roof water to ground)
- There are no other feasible disposal options such as shallow infiltration systems or drainage fields/mounds that can be operated in accordance with the appropriate current British Standard 6297:2007+A1:2008.
- The system is no deeper than required to achieve sufficient soakage
- Acceptable pollution control measures are in place
- Risk assessment demonstrates that no unacceptable discharge to groundwater will take place – in particular inputs of hazardous substances to groundwater will be prevented
- There are sufficient mitigating factors or measures to compensate for the increased risk arising from the use of deep structures

Pages 178 & 179, Section 14.6. Flood storage compensation must be provided where levels are raised or structures introduced into the floodplain. Drawings and calculations should be 'signed off' by the Environment Agency. One of the key operational mitigations should be to design the scheme to minimise the amount of flood plain compensation required. This does not appear as one of the suggested mitigations. We would like to see full consideration of detailed design options that minimise land take within the floodplain.

Page 179, Section 14.6.2. Please note that the Environment Agency is opposed to the culverting of watercourses because of the adverse ecological, flood risk, geomorphological, human safety and aesthetic impacts caused.

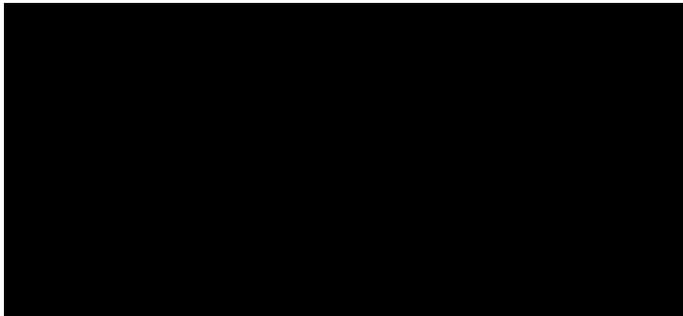
Pages 182 & 183, Table 50. In accordance with the NPPF and NPSNN, it would need to be demonstrated that the scheme, both during construction and operation, will not increase flood risk elsewhere. An increase in flood risk could be caused by structures in the floodplain resulting in the loss of fluvial floodplain storage, or the impedance of tidal flood paths, resulting in increases in flood risk to properties, infrastructure or land elsewhere.

## **CHAPTER 15 CLIMATE**

Page 189, section 15.4.10. Any final design and Flood Risk Assessment will need to take into account the uncertainties regarding flood risk over the lifetime of the infrastructure. We are awaiting updated climate change allowances for peak river flow in 2021 based on UKCP18 projections. We would expect these allowances to be considered ahead of the submission of post-development designs. Sea level rise allowances were updated in December 2019 based on UKCP18. There are no planned updates to these allowances. This includes the standard of flood risk infrastructure on the Arun over the next 100 years. Therefore, we recommend that you consider the impacts of climate change and the implications of an undefended scenario in considering the options, including any high level assessment on flood risks.

We hope you find our response useful. If you require clarification or wish to discuss any of the points made, please do not hesitate to get in touch.

Yours sincerely



**Mrs Marguerite Oxley**  
**Sustainable Places Technical Specialist**

Direct dial [REDACTED]

Direct e-mail [REDACTED] [@environment-agency.gov.uk](mailto:[REDACTED]@environment-agency.gov.uk)

***Our opinion is based on the information available to us at the time of the request. If, at the time of the submission of the formal DCO, there have been changes to environmental risk(s) or evidence, and/or planning policy, our position may change.***

[A27ArundelBypass@planninginspectorate.gov.uk](mailto:A27ArundelBypass@planninginspectorate.gov.uk)

**The Planning Inspectorate**

Environmental Services  
Central Operations  
Temple Quay House  
2 The Square  
Bristol,  
BS1 6PN

**South East & London**

Bucks Horn Oak  
Farnham  
GU10 4LS  
Tel: 0300 067 4420  
[southeast&london@forestrycommission.gov.uk](mailto:southeast&london@forestrycommission.gov.uk)

28<sup>th</sup> March 2021

Area Director: Craig Harrison

Your reference: TR010045-000009

Dear Sirs

**Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11**

**Application by Highways England (the Applicant) for an Order granting Development Consent for the A27 Arundel Bypass (the Proposed Development)**

**Forestry Commission advice in respect of the key factors relating to trees and woodland which should be considered in the scope of the Environmental Statement**

Thank you for seeking the Forestry Commission's advice as to aspects which should be considered in the Environmental Statement to be prepared for this project. In principle it is encouraging that the preferred route selected avoids the very significant areas of ancient woodland and the diverse woodland shaws to the north. However, any project of this scale will have a huge impact on a diverse range of factors. There is an ever growing appreciation of the many benefits trees and woodland can bring to the environment, society and business, hence we suggest a principle which should be 'in scope' are the ways in which trees and woodland can be used to ameliorate the impacts of the development.

- **Minimisation of the loss of trees and woodland:** most woodland has been avoided but some relatively new woodland sits on the eastern side of the Binsted Rife close to where the bypass will cross the Rife. In addition hedgerow trees should be avoided if at all possible (though the predations of ash die back mean the longer term survival of trees of this species is dubious).
- **Impacts on ecological connections: hedgerows, streams, rifes:** The incised nature of the 'rifes' in this area provide key commuting corridors for local wildlife and options to maintain these corridors is key.

Potential for positive use of trees and woodland along the route:

- **Landscape:** tree planting is traditionally carried out alongside new roads. In this case we recommend that consideration goes beyond the road corridor to build on the wider landscape of the national park. The scale of the new road will change the intimate landscape of this area – how could trees and woodland be used to help build on the existing character (as discrete from ‘just’ screening the road?). This ‘wider’ approach has been applied to other major infrastructure corridors including the Birmingham Northern Relief Road and HS2. The wider benefits that such well designed and managed woodland can deliver include:
  - **Air quality:** trees and woods have been shown to filter particulates (appreciating that quantity of combustion emissions will be reduced as technologies evolve, dust etc from traffic remain);
  - **Water Quality:** The route could impact both existing water flows over and through the area AND run-off from the new carriageway will need to be managed. Woodlands can be designed to act as filters for run-off.
  - **Access improvements:** Both along and across the route:
    - Could pedestrian or cycle routes be included along the route in a safe way? In particular as the route crosses the Arun valley?
    - Cross routes to allow walkers and cyclists to transit north/south from the coast to the Downs? There appear to be opportunities where the route crosses the ‘rifes’.
  - **Fragmentation:** Inevitably some fields will be fragmented and made too small to be viable in their current use. Unviable fields can attract landuses which are less traditional to the local area. Consideration should be given to allocating a function to such sites which is complementary – which might be woodland.

**MANAGEMENT:** Trees and woodland require management and the function they deliver dictates the management needed. For instance if permanent screening is required then a continuous cover silvicultural system is needed.

**BIOSECURITY:** Two aspects of critical importance:

- **Pests and diseases:** all your trees should be sourced to minimise the risks of introducing tree pests and diseases; and
- **Equipment and materials** should be managed to ensure pests and diseases are not imported (for instance – all machinery should be clean when it arrives and leaves the site).

**RESILIENCE:** Tree species, and provenances, should suite the specific site but also be sufficiently diverse to cope with a changing climate. Recommend the ES review the history of the local treescape and how it could evolve to reflect that character while being resilient in a changing climate. Consider:

- What impact elm trees had on the local landscape until the predations of 'Dutch elm diseases' in the 1970's; and
- The current impact of ash dieback.

**Construction materials:** Using locally sourced materials during construction of the project would help support local businesses and infrastructure. For instance use local sourced wood and where appropriate traditional woodland products such as chestnut fencing.

We hope these comments are helpful to you. If you have any further queries please do not hesitate to contact me.

Yours faithfully



Matthew Woodcock  
Partnership & Expertise Manager South East

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Cc:** [Planning SE](#)  
**Subject:** Highways England response: TR010045-000009, DCO A27 Arundel Bypass  
**Date:** 19 March 2021 15:43:31

---

**For the attention of:** Karen Wilkinson

**Planning Inspectorate Ref:** TR010045-000009

**Application:** Development Consent Order for the A27 Arundel Bypass

**Consultation:** Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested

**Highways England Ref:** #12799

Dear Ms Wilkinson

Thank you for your email of 4 March 2021 notifying Highways England of the Development Consent Order application consultation referenced above with a response deadline of 1 April.

Highways England has been identified as a consultation body for the Scoping Opinion because we are the highway authority, traffic authority and street authority for the A27 trunk road. The A27 Arundel Bypass project will be following all the statutory processes and procedures, and so we have no comments at this time.

Thank you for consulting us. If you have any queries regarding this response, please contact us at [PlanningSE@highwaysengland.co.uk](mailto:PlanningSE@highwaysengland.co.uk)

Kind regards,

**Elizabeth Cleaver, Assistant Spatial Planning Manager**

Highways England | Bridge House | 1 Walnut Tree Close | Guildford | Surrey | GU1 4LZ  
Web: <http://highwaysengland.co.uk/>

Highways England Company Limited | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ | Registered in England and Wales No. 9346363

This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.

**Highways England Company Limited | General enquiries: 0300 123 5000**  
**| National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park,**  
**Birmingham B32 1AF | [https://www.gov.uk/government/organisations/highways-](https://www.gov.uk/government/organisations/highways-england)**  
**[england](https://www.gov.uk/government/organisations/highways-england) | [info@highwaysengland.co.uk](mailto:info@highwaysengland.co.uk)**

*Registered in England and Wales no 9346363 | Registered Office: Bridge House,  
1 Walnut Tree Close, Guildford, Surrey GU1 4LZ*

Consider the environment. Please don't print this e-mail unless you really need to.



Historic England

Sir/Madam Planning Inspectorate - A27 Bypass

Direct Dial: [REDACTED]

Planning Inspectorate

Environmental Services Central Operations

Our ref: PL00742762

Temple Quay House

2 The Square

Bristol

BS1 6PN

31 March 2021

Dear Sir/Madam Inspectorate - A27 Bypass

Thank you for consulting us on the above proposal. Historic England provides the following advice.

### **Summary**

This scheme has the potential to have serious impacts upon heritage assets' significance. As such, we agree that cultural heritage should be scoped into the Environmental Statement (ES).

We note that the Scoping Report is very high level and as a result does not, in our view, comprehensively understand or fully assess all potential impacts to heritage significance. We therefore provide advice and recommendations below regarding what further issues need to be assessed and how this should be approached.

These are also summarised within the final 'Conclusions and Recommendations' section.



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk



*Historic England is subject to both the Freedom of Information Act (2000) and Environmental Information Regulations (2004). Any Information held by the organisation can be requested for release under this legislation.*



## **Historic England Advice**

### **The Scoping Report**

We are encouraged to see that the Scoping Report confirms that the Environmental Assessment will:

- identify all known designated and undesignated heritage assets (7.8.4), and assess the potential for further as yet unknown assets (7.7.4);
- assess their level of significance (7.8.14) (including through site visits) (7.8.5);
- assess their impact from the scheme: both in terms of physical direct impact and though impact upon setting (7.8.15 & 7.5.1);
- assess these impacts following proposed mitigation (7.8.16)

We agree that a desk-based assessment (7.8.3, 7.8.4) supported by field investigation (7.8.21) is required to identify and assess the value of known and also as yet unknown heritage assets; and that the results will be fed into the ES where the impact of the scheme on the significance of these assets will be considered.

### **Setting of Heritage Assets**

The proposed scheme is a very large new piece of infrastructure and will be visible within numerous views, both short and long. It thus has the potential to cause a high degree of change to the setting of numerous heritage assets. As such, assessment of impact to setting (and resulting harm to significance of heritage assets) in particular will need to be thorough, qualitative and holistic. It should certainly be the subject of its own Heritage Assessment.

### **Proposed Study Area**

We think that the proposed study area (for scoping in assets for setting assessment) is far too limited, arbitrary and quantitative in nature. The Scoping Report defines a study area of 1km from the site boundary, or 5km for assets of the highest value (Grade I or II\* buildings or scheduled monuments) (7.3.1).



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk





This does not reflect the scale of the scheme; nor how complex and far-reaching its impact upon the setting of heritage assets could be. Nor does this approach take into account the topography of the land. For instance, this scheme is likely to be far more visually intrusive from some locations (e.g. across the flat Arundel plain or from the crest of the South Downs), than others. This complexity cannot be accommodated by the Study Area currently proposed.

We understand that it would not be feasible to undertake a detailed assessment for every asset in view of the scheme, or across a wider study area. Therefore, we recommend that a qualitative, holistic and bespoke approach is taken to ensure impact can be comprehensively understood, but in a time-efficient manner.

To achieve this, we recommend that you follow the advice given within our guidance (“The setting of Heritage Assets; Historic Environment Good Practice Planning Note 3), which suggests a staged approach in assessing setting. The first stage should be a high-level, rapid but qualitative assessment of which assets’ setting will be detrimentally impacted by the scheme. This assessment should be based on the Zone of Theoretical Visibility (ZTV).

Given the number of assets, we suggest that these are assessed in thematic groups at this stage. For instance, to assess whether the scheme could harm the significance of groups of assets, such as barrows on the South Downs, listed farmsteads, or churches.

This first rapid assessment should lead to a more refined list of assets, which should then be subject to further assessment as set out in our setting guidance.

This staged approach should be applied to all heritage assets irrespective of their designation status or grade.

Notwithstanding the faults in the proposal for a 1km study area, the scoping report highlights the number of designated assets in the study area which includes a number of highly graded heritage assets. It is not clear why some listed buildings within the study area are individually identified, and others are not, such as the many listed buildings within Arundel, Walberton and Slindon and their conservation areas.

From the information so far presented, we agree that highly graded assets individually identified such as Arundel Castle, Tortington Priory and Barn would need full and careful assessment. We consider that there will likely also be an impact on others which have not been individually listed including Arundel Cathedral and St Mary’s Church, Binsted, which would also need full assessment. This is not an exhaustive list, and we would expect the assessment to be far wider reaching as discussed above.



Arun District Council's Conservation Officer should also be consulted for further advice on the assessment of grade II buildings, conservation areas and locally listed buildings and the impacts to their settings.

### Photomontages

It is also very important that - as part of the second more detailed stage of setting assessment - the applicant demonstrates the visual aspects of setting impact for all of the most affected assets, using verified view photomontages. These have not yet been provided, although we have previously advised that they should be. We would be happy to advise on appropriate key views for assessment, if required.

It is also important that photomontages are provided to demonstrate the relative impact of different designs, while these are still being discussed. For example, they will be very useful to demonstrate the relative impacts of viaduct and embankment design options.

### Holistic assessment

Setting encompasses more than views and inter-visibility alone. The assessment should include consideration of the effects of noise and pollution on our appreciation of heritage assets, as well as the potential impacts on our understanding of historic relationships between assets and places, which can amplify our understanding of their significance.

It is also important to remember that it is not only built heritage that has a setting but that buried archaeology can have a setting.

### Historic Landscape Character

It is very concerning that the Scoping Report includes no intention to assess the scheme's impact upon historic landscape character as part of the Cultural Heritage Chapter (Chapter 7). Nor does the Landscape and Visual Chapter (Chapter 8) include heritage as a consideration within its assessment of landscape significance.

This is disappointing, considering our previous comments of 14 February 2020 (PA00383451) that identified this matter as a key concern for this route option. In our view, this scheme has the potential to cause a serious degree of harm to a highly significant historic landscape that has a low capacity for change. Assessment of HLC



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk





will help appreciate the likely effects of the proposed change, not only on individual assets within their wider landscape context, but also of entire historic towns and villages, including Arundel, Walberton and Slindon within the landscape.

### **Integrated Assessment**

The Scoping Report states an intention to adopt a “landscape approach” to assessment in general; to ensure impacts to environmental receptors are understood in an integrated way (4.4.3; 4.4.5). Despite this stated intention, we think that there is poor integration between the different chapters.

Given the scale of the development and its potential to impact on numerous different environmental factors, the importance of cross-disciplinary work cannot be overstated for this scheme. In particular, there is a vital need for synthesis between landscape and heritage issues as each is so strongly shaped by, and dependant upon, the other.

Based on the Scoping Report, we are concerned this will not be achieved in the Environmental Statement. As mentioned above, the Landscape and Visual Chapter does not mention heritage; nor vice versa. Similarly, the LVIA identifies sensitive receptors but does not include any heritage assets within this list.

There are also inter-relations between the Heritage Chapter and many other Chapters. For instance, noise and changes to the water environment can have serious implications for archaeological survival. For a project such as this, all chapters and their contents should ideally be considered in relation to each other and woven together to form a holistic assessment.

### **Holistic assessment**

It is important that the Environmental Assessment assesses the impact of all aspects and phases of the development, including any impacts (negative or positive) that may result from the de-trunking of the existing A27.

We note that a number of different options/alternatives for the scheme are still being discussed. In particular, whether the road will cross the flood plain by means of a viaduct or an embankment (4.4.7 & 4.4.8). The relative impact of each different option is evaluated as part of the assessment - both in terms of its impact upon archaeological remains, and upon the setting of heritage assets and the historic landscape character.



There is also a need to establish at an early stage: whether and how foundations and ground consolidation for an embankment option might change aspects of sub-surface groundwater flow; and the impact this might have on buried archaeological remains. Cuttings for the new road may also impact upon water flow patterns and should be comprehensively assessed. This potential for indirect impact to archaeological remains will need to be fed into the overall Environmental Statement.

### **Archaeological Field Assessment**

We agree that intrusive archaeological investigation is needed - both to evaluate the significance of known archaeological assets; and identify and characterise the site's as-yet unknown potential archaeological resource (7.7.4).

Although not detailed within the Scoping Report, we have so far have been encouraged by the thorough approach to archaeological assessment that has been presented by Highways England's archaeological consultants, during recent meetings. Both the County Archaeologist and Historic England have had the opportunity to input into Written Schemes of Investigation for the investigation, and we look forward to continued engagement as assessment progresses.

The scheme crosses complex outcrops of superficial geology, within which potentially important archaeological evidence dating to the Palaeolithic and prehistoric period is likely to survive. Geoarchaeological approaches are needed to assess the potential for survival of these deeply buried archaeological remains within the Arun Valley and Rifes, as well as associated with the raised beaches and associated deposits of the Coastal Plain.

Therefore, the DBA should include, or refer to, a geoarchaeological assessment and deposit model informed by appropriate specialist surveys, in order to understand this resource, and ensure it is considered in the design scheme and mitigation (7.8.21 and 22).

There is a large amount of evaluative fieldwork still remaining to be done, some of which must be carried out in an iterative manner. It is very important that the full results are incorporated into the Environmental Statement; in order to fully understand the impact to the area's important archaeological resource.

### **Conclusions and Recommendations**



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk





The assessment proposed within the Scoping Report will be insufficient to comprehensively understand impacts to heritage significance. The following matters will need to be addressed to rectify this issue.

- A more qualitative and holistic approach of the setting of heritage assets, and the impact upon them by the scheme, is required. We agree that this should be proportionate to the scale of impact and will require staged approach similar to that described in our guidance on the assessment of heritage settings.
- Impacts to setting must be demonstrated using verified view photomontages.
- A comprehensive and qualitative assessment of impact upon historic landscape character is of vital importance for this scheme. Impacts should be demonstrated using verified view photomontages.
- A more integrated and cross-disciplinary approach to the chapters of the Environmental Statement. In particular, the Cultural Heritage and Landscape & Visual Chapters should be thoroughly integrated. The LVIA should scope in heritage assets as sensitive receptors where appropriate.
- Assessment should account for all aspects and phases of the development; and comprehensively assess the relative impact of different design options that are still under discussion (notably, embankment versus viaduct).
- Archaeological field assessment should be completed to inform the drafting of the Environmental Statement. We will be pleased to continue to advise you and the County Archaeological Advisor.
- We would also be pleased to help inform the further work needed to assess impacts on setting of designated and undesignated heritage assets within the Environmental Statement

We hope that you find the information outlined above useful as you continue to work on your proposal. If you have any queries about any of the above, or would like to discuss anything further, please contact us.

Yours sincerely,

Maria Buczak  
Assistant Inspector of Ancient Monuments  
[REDACTED]@HistoricEngland.org.uk



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk





Historic England

on behalf of:

Alma Howell

Inspector of Historic Buildings and Areas

██████████@HistoricEngland.org.uk

cc: Paul Roberts, Team Leader, Historic England

Isabelle Ryan, Assistant Inspector of Buildings and Areas, Historic England

Jane Corcoran, Science Advisor, Historic England

Anthony Whitaker, Principal Consultant, AECOM



4TH FLOOR, CANNON BRIDGE HOUSE, 25 DOWGATE HILL, LONDON EC4R 2YA

Telephone 020 7973 3700  
HistoricEngland.org.uk



*Historic England is subject to both the Freedom of Information Act (2000) and Environmental Information Regulations (2004). Any Information held by the organisation can be requested for release under this legislation.*

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Subject:** FW: TR010045 Arundel A27 Bypass EIA Scoping Notification -  
**Date:** 01 April 2021 15:32:35  
**Attachments:** [image005.jpg](#)  
[image011.jpg](#)  
[image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
**Importance:** High

---

Dear Karen

Thank you for the above consultation.

Whilst the route is outside of the Horsham District and therefore much of the scope of the document falls outside of our area of remit, it is important that the EIA fully considers air quality and traffic movements through Storrington and the surrounding Horsham District. We therefore welcome that the study includes Storrington and extends to Steyning. Any impact and mitigation on this matter must be fully explored.

Chapter 13 should also take into account the impacts to health as a result of traffic movements in particular through AQMAs such as Storrington.

Kind regards

Emma

**Coronavirus (COVID-19):**

For information regarding our services during the current situation please visit the Planning Services update on our [website](#)

**Emma Parkes**

Head of Development and Building Control

**Telephone:** [REDACTED]

**Email:** [REDACTED]@horsham.gov.uk



---

Horsham District Council, Parkside, Chart Way, Horsham, West Sussex RH12 1RL  
Telephone: 01403 215100 (calls may be recorded) [www.horsham.gov.uk](http://www.horsham.gov.uk) Chief Executive: Glen Chipp

---

**From:** A27 Arundel Bypass <A27ArundelBypass@planninginspectorate.gov.uk>  
**Sent:** 04 March 2021 14:59  
**Subject:** TR010045 A27 Bypass EIA Scoping Notification - FAO Head of Planning

Dear Head of Planning

Please see attached correspondence on the proposed A27 Arundel Bypass.

Please note the deadline for consultation responses is Thursday 1<sup>st</sup> April, and is a statutory requirement that cannot be extended.

Regards  
Karen

Karen Wilkinson  
Environmental Services Advisor  
Environmental Services  
Direct Line: [REDACTED]  
Helpline: 0303 444 5000  
Email: [REDACTED]@planninginspectorate.gov.uk

Web: <https://infrastructure.planninginspectorate.gov.uk/> (National Infrastructure Planning)  
Web: [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate) (The Planning Inspectorate)  
Twitter: @PINSgov

This communication does not constitute legal advice.  
Please view our [Privacy Notice](#) before sending information to the Planning Inspectorate.



*Please note that the contents of this email and any attachments are privileged and/or confidential and intended solely for the use of the intended recipient. If you are not the intended recipient of this email and its attachments, you must take no action based upon them, nor must you copy or show them to anyone. Please contact the sender if you believe you have received this email in error and then delete this email from your system.*

*Recipients should note that e-mail traffic on Planning Inspectorate systems is subject to monitoring, recording and auditing to secure the effective operation of the system and for other lawful purposes. The Planning Inspectorate has taken steps to keep this e-mail and any attachments free from viruses. It accepts no liability for any loss or damage caused as a result of any virus being passed on. It is the responsibility of the recipient to perform all necessary checks.*

*The statements expressed in this e-mail are personal and do not necessarily reflect the opinions or policies of the Inspectorate.*

DPC:76616c646f72



**Disclaimer**

IMPORTANT NOTICE This e-mail might contain privileged and/or confidential information. If you have received this e-mail in error, please notify the sender and delete the e-mail immediately; you may not use or pass it to anyone else. Whilst every care has been taken to check this outgoing e-mail for viruses, it is your responsibility to carry out checks upon receipt. Horsham District Council does not accept liability for any damage caused. E-mail transmission cannot guarantee to be secure or error free. This e-mail does not create any legal relations, contractual or otherwise. Any views or opinions expressed are personal to the author and do not necessarily represent those of Horsham District Council. This Council does not accept liability for any unauthorised/unlawful statement made by an employee. Information in this e-mail may be subject to public disclosure in accordance with the law. Horsham District Council cannot guarantee that it will not provide this e-mail to a third party. The Council reserves the right to monitor e-mails in accordance with the law. If this e-mail message or any attachments are incomplete or unreadable, please telephone 01403 215100 or e-mail [contact@horsham.gov.uk](mailto:contact@horsham.gov.uk). Any reference to "e-mail" in this disclaimer includes any attachments.

This email has been scanned for viruses and malware, and may have been automatically archived by **Mimecast Ltd**.

CEMHD - Land Use Planning,  
NSIP Consultations,  
Building 1.2,  
Redgrave Court,  
Merton Road,  
Bootle, Merseyside  
L20 7HS.

HSE email: [NSIP.applications@hse.gov.uk](mailto:NSIP.applications@hse.gov.uk)

FAO Karen Wilkinson  
The Planning Inspectorate  
Temple Quay House  
Temple Quay  
Bristol  
BS1 6PN  
By email only

Dear Ms Wilkinson,

23 March 2021

**PROPOSED A27 Arundel Bypass (the project)  
PROPOSAL BY Highways England (the applicant)  
INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017 (as  
amended) REGULATIONS 10 and 11**

Thank you for your letter of the 4 March 2021 regarding the information to be provided in an environmental statement relating to the above project. HSE does not comment on EIA Scoping Reports but the following information is likely to be useful to the applicant.

**HSE's land use planning advice**

Will the proposed development fall within any of HSE's consultation distances?

According to HSE's records there are no major accident hazard sites or major accident hazard pipelines within the proposed DCO application boundary of the proposed A27 Arundel Bypass for this Nationally Significant Infrastructure Project.

This is based on the current configuration as illustrated in, for example, Figure 1: Scheme Location Plan of the A27 Arundel Bypass Environmental Impact Assessment Scoping Report Document No: HE551523-BAM-EGN-ZZ-RP-LE-0002 Revision: P03 Date: 25/02/21

HSE's Land Use Planning advice would be dependent on the location of areas where people may be present. When we are consulted by the Applicant with further information under Section 42 of the Planning Act 2008, we can provide full advice

Hazardous Substance Consent

The presence of hazardous substances on, over or under land at or above set threshold quantities (Controlled Quantities) will probably require Hazardous Substances Consent (HSC) under the Planning (Hazardous Substances) Act 1990 as amended. The substances, alone or when aggregated with others for which HSC is required, and the associated Controlled Quantities, are set out in The Planning (Hazardous Substances) Regulations 2015 as amended.

HSC would be required to store or use any of the Named Hazardous Substances or Categories of Substances at or above the controlled quantities set out in Schedule 1 of these Regulations.

Further information on HSC should be sought from the relevant Hazardous Substances Authority.

### Consideration of risk assessments

Regulation 5(4) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 requires the assessment of significant effects to include, where relevant, the expected significant effects arising from the proposed development's vulnerability to major accidents. HSE's role on NSIPs is summarised in the following Advice Note 11 Annex on the Planning Inspectorate's website - [Annex G – The Health and Safety Executive](#). This document includes consideration of risk assessments on page 3.

### Explosives sites

HSE has no comment to make as there are no licensed explosives sites in the vicinity.

### Electrical Safety

No comment from a planning perspective.

During lockdown, please send any further communication on this project directly to the HSE's designated e-mail account for NSIP applications at [nsip.applications@hse.gov.uk](mailto:nsip.applications@hse.gov.uk) We are currently unable to accept hard copies, as our offices have limited access.

Yours sincerely,

Monica

Monica Langton  
CEMHD4 NSIP Consultation Team

Date: 01 April 2021  
Our ref: 345571  
Your ref: TR010045-000009



Karen Wilkinson  
EIA Adviser  
The Planning Inspectorate  
Environmental Services  
Central Operations  
Temple Quay House  
2 The Square  
Bristol BS1 6PN

Customer Services  
Hornbeam House  
Crewe Business Park  
Electra Way  
Crewe  
Cheshire  
CW1 6GJ

T 0300 060 3900

**BY EMAIL ONLY**

Dear Karen Wilkinson

**Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11  
Application by Highways England (the Applicant) for an Order granting Development Consent for the A27 Arundel Bypass (the Proposed Development)  
Scoping consultation and notification of the Applicant's contact details and duty to make available information to the Applicant if requested**

Thank you for seeking our advice on the scope of the Environmental Statement (ES) in your consultation dated 04 March 2021 which we received on the same day.

Natural England (NE) is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

NE welcomes the opportunity to provide advice on the project at this stage and our detailed comments are provided in Annex One appended to this letter with a summary of this provided below:

NE has advised Highways England (HE) throughout that the area covered by the Environmental Impact Assessment is of national/international significance. This is reflected not only in the presence of the South Downs National Park and its setting but also because of its exceptional importance for biodiversity. This environment contains a suite of key, priority and irreplaceable habitats and species. The interconnected nature of this, largely undeveloped environment is particularly reflected in the presence of an outstanding assemblage of species. The presence of maternity roosts of rare bats including Barbastelle, bechsteins and the alcathoe bat and the presence of the Greater Horseshoe bat is one of both of particular note and of concern to Natural England as it demonstrates the exceptional importance of this environment and the need for its protection.

NE has advised HE of our considerable concerns regarding the impact that offline options have for biodiversity and landscape via loss and severance of habitats. We welcomed HE's decision to reconsider less damaging online options in a new public consultation and have advised throughout that these options should be pursued. This approach is in line with policy requirements and Highways England's objectives and licence to operate. Natural England have provided consistent advice to HE on how this can be achieved.

It is of significant concern therefore, that the preferred route for the Arundel Bypass presents a highly damaging scheme within this exceptionally important environment. In order for the EIA to fully assess the impacts of this preferred route the following elements need to be key considerations;

### Bats

It is of critical importance that the functionality of the landscape for bats is maintained across the chosen route and that the EIA demonstrates this thorough assessment of the impact of severance and how it could be mitigated within the EIA. We advise that it is currently not clear how the EIA will assess this and the risk of mitigation efficacy with regard to bat crossings is of particular concern.

NE have advised that the presence of maternity roosts for rare bat species is of international significance and, together with the wider bat species assemblage (of at least 14 species), indicates the landscape as being of the highest quality. The interconnected mosaic of long-established habitats represents crucial supporting habitats for these species. The impact of severance of these habitats for bat species therefore clearly requires particular consideration to ensure that the species present are not adversely affected by the proposals. The impacts to bats with regards to barrier effects, collision mortality, habitat fragmentation and edge effects are considerable.

We have highlighted that early and thorough assessment of impacts to bats is of particular importance as it is unclear how the required level of confidence in the efficacy of avoidance, mitigation and/or compensation measures can be demonstrated given the clear significance of this area, and the lack of clear evidence to support the effectiveness of such measures. Following the Preferred Option Announcement NE wrote to HE on 2<sup>nd</sup> December 2020 expressing our significant concern with the chosen route, advising that this presents a significant risk to the viability of the scheme and inviting urgent consultation with regard to this matter. To this end we welcome that HE has approached NE for comment on bat surveys and mitigation. Landscape

The Arundel Bypass has significant impacts to the setting and Special Qualities of The South Downs National Park. The scheme will sever Arundel from its valley and impact on the National Park's statutory purpose.

The EIA will need to carefully consider the profound impact of the Arundel Bypass on this highly sensitive nationally significant landscape.

### An Integrated Approach

Due to the nature of and location of this complex scheme all the Defra bodies and the South Downs National Park have consistently advised that a bespoke, landscape- scale assessment is required in order to accurately appraise the impact of this scheme on landscape and biodiversity and floodplain habitats and to ensure mitigation is fit for purpose in this rich and diverse environment. We have advised that an assessment of the impact of severance on landscape, biodiversity and the floodplain must be a key principle for scheme.

It has previously been acknowledged that provision for any mitigation or compensation areas may need to be offsite. However, at present no information has been provided on the likely location of these potential areas; if offsite areas are required then the application boundary should be updated to reflect this.

Based upon the information provided, Natural England advises that the scheme will have significant impacts on a National park and an extraordinary environment, which evidence has shown to be of significant importance to biodiversity.

We look forward to working with the applicant as the scheme progresses towards the development consent order submission to ensure that the rich biodiversity and landscape assets within the application boundary are conserved and enhanced through the development. We would also expect the environmental statement to detail how the project will contribute to the Government's 25 Year Environment Plan, through the delivery of biodiversity net gain.

I trust this advice is helpful; if you have any queries regarding this letter please do not hesitate to contact me by email to [REDACTED]@naturalengland.org.uk.

Yours sincerely

Rebecca Pearson  
Senior Adviser  
Sussex and Kent Team

## **Annex A – Advice related to EIA Scoping Requirements for the Arundel Bypass NSIP**

Case law<sup>1</sup> and guidance<sup>2</sup> has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission

### **General Principles**

Schedule 4 of the Town & Country Planning (Environmental Impact Assessment) Regulations 2017, sets out the necessary information to assess impacts on the natural environment to be included in an ES, specifically:

- A description of the development – including physical characteristics and the full land use requirements of the site during construction and operational phases.
- Expected residues and emissions (water, air and soil pollution, noise, vibration, light, heat, radiation, etc.) resulting from the operation of the proposed development.
- An assessment of alternatives and clear reasoning as to why the preferred option has been chosen.
- A description of the aspects of the environment likely to be significantly affected by the development, including, in particular, population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the interrelationship between the above factors.
- A description of the likely significant effects of the development on the environment – this should cover direct effects but also any indirect, secondary, cumulative, short, medium and long term, permanent and temporary, positive and negative effects. Effects should relate to the existence of the development, the use of natural resources and the emissions from pollutants. This should also include a description of the forecasting methods to predict the likely effects on the environment.
- A description of the measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment.
- A non-technical summary of the information.
- An indication of any difficulties (technical deficiencies or lack of know-how) encountered by the applicant in compiling the required information.

As part of the environmental impact assessment process, and in accordance with the National Planning Policy Framework (Paragraph 175), the scheme should demonstrate how measures (such as the location, design, scale and site layout) have been designed to avoid impacts to biodiversity and geodiversity assets, fully mitigate them or as a last resort compensate for any residual impacts.

It will be important for any assessment to consider the potential cumulative effects of this proposal, including all supporting infrastructure, with other similar proposals and include a thorough assessment of the 'in combination' effects of the proposed development with any existing developments and current applications. A full consideration of the implications of the whole scheme should be included in the ES.

Natural England had significant concerns and provided advice regarding the Environmental Assessment Reports and Interim Scheme Assessment Reports as part of our response to the Public Consultation of 24 October 2019. We refer you to these comments as they are also applicable to the EIA.

### **An integrated landscape-scale approach**

We, and others, have advised that the significance of this area requires a bespoke approach to

---

<sup>1</sup> Harrison, J in *R. v. Cornwall County Council ex parte Hardy* (2001)

<sup>2</sup> *Note on Environmental Impact Assessment Directive for Local Planning Authorities* Office of the Deputy Prime Minister (April 2004) available from <http://webarchive.nationalarchives.gov.uk/+http://www.communities.gov.uk/planningandbuilding/planning/sustainability/environmental/environmentalimpactassessment/noteenvironmental/>

assessment. The presence of the National Park and the area's outstanding assemblage of species within a complex of interconnected quality habitats, together contribute to the area's natural beauty.

We advise that a landscape- scale assessment is required in order to fully evaluate the impact of this scheme on both landscape and biodiversity and to ensure any mitigation is fit for purpose. This scale of assessment is necessary as the landscape contains a long- established interconnecting mosaic of quality and irreplaceable habitats which are not only important in their own right but are also key to the character and natural beauty of the area providing a permeable suite of habitats for a clearly outstanding array of species. In reflection of this The Defra bodies have collectively advised the following:

*The options presented introduce the permanent and significantly harmful severance of this sensitive landscape, cultural heritage and its biodiversity. We have advised that a scheme of this nature in this landscape will require a tailored approach to mitigation.*

*It is essential that landscape, biodiversity, hydrology and cultural heritage are considered together in an environmental masterplan in order to appropriately address severance and resilience and to avoid the potential for addressing one issue to the detriment of another (see below) 1. We recommend that a body or consultancy is appointed to undertake this specific high level and visioning role as a priority. We have advised that the Natural Capital assets of the area must be included in the assessment.*

*As an overarching principle we have advised that any option for the bypass should be considered in an integrated way at a landscape scale. This will ensure that impacts on a complex and interconnected ecosystem, set within a wider hydrological catchment, are fully understood alongside any impacts on the historic landscape.*

In light of these considerations we advise that the EIA must include an integrated landscape scale of assessment of impact as an overriding principle.

We note 2.5.3 which states that.

*Highways England is taking a landscape and environment led approach to reviewing the site context at a landscape-scale, considering landscape character, the stock of natural capital assets in the landscape, and the ecosystem services that those natural capital assets provide.*

We welcome a landscape and environment led approach. However, we advise that a landscape - scale assessment requires as an overarching principle, an assessment of severance within the EIA. This will be critical for this scheme which introduces a major severing impact into a highly complex and interconnected environment. We have highlighted how if severance is not accurately assessed, any mitigation will not be able to demonstrate that it will be fit for purpose. A landscape and environmental led approach needs to appraise the impact of the scheme on the resilience of this landscape, by assessing the functionality of the ecosystems that exist and the impact of severance on there.

#### General comments on Comments on submitted Figures and Future survey work

Table 20 states that the phase 1 survey will be completed within 100m of the scheme, however this was previously stated to be 200m.

Due to the nature and location of this scheme it is essential that the surveys to inform the EIA cover sufficient area from which to assess the fragmentation effects of this scheme. We have advised that a landscape-scale assessment is required for this purpose .

#### Fig 3

- This is not clear as it only shows the mid-line of the road, and not the true extent including the working width, this needs to be incorporated to include direct and indirect assessments.
- Furthermore, key connective habitats such as Lake Copse, The Shaw and The Lag, which

are of exceptional importance as bat flightlines and foraging habitats, have not been shown on the map, despite them being immediately adjacent to the area of search.

We therefore advise that in order to provide the required landscape- scale of assessment a corridor of the centre line of the road and habitats each side will not be enough.

- Additionally, the map has not included floodplain grazing marsh priority habitat.

#### Fig 4

Although this broadens out the to a 1km area of search, it does not include connecting habitats, hedgerows for example, so does not show the functionality of the habitats within the area of search. Furthermore, the true impact is not accurately reflected as only the centreline of the road is shown.

#### Further Surveys and design

5.4.12 uses the term *offsetting* which we advise is not appropriate. We advise that the ES follows the mitigation hierarchy through assessment and designing a scheme which demonstrably avoids significant harm to biodiversity.

The mitigation hierarchy is a key principle of sustainable development and is embedded in the National Network NPS which states that:

*5.25 As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives.*

*Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.*

We advise that the EIA must include an impact assessment of severance, as above. This impact is mentioned in relation to construction but not operation and no assessment methodology is included for this key impact.

The ES must fully assess temporary impacts via construction activities, this will widen the area of impact and therefore the magnitude of this needs to be fully assessed.

We note and welcome the additional survey work and advise that habitats surrounding Tortington and Binstead Rife should be subject to further surveys. These areas include key habitats such as chalk streams, wet marshy grassland and fen habitats. Hitherto survey work in these areas has not been extensive. They also provide key linear habitats through the landscape, linking to Lake Copse, Little Danes wood, The Lag and The Shaw for example.

In relation to the information that has been provided, invertebrates are notably abundant and we advise that additional surveys for invertebrates are required.

We welcome engagement with HE regarding the methodology and scope of bat surveys.

We have previously advised that multiple quality green bridges will be a minimum requirement for severance impacts of the scheme and this has not been included in the Scope.

## **Biodiversity and Geology**

### **Ecological Aspects of an Environmental Statement**

Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within

this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EclA) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM) and are available on their website.

EclA is the process of identifying, quantifying and evaluating the potential impacts of defined actions on ecosystems or their components. EclA may be carried out as part of the EIA process or to support other forms of environmental assessment or appraisal.

The National Planning Policy Framework sets out guidance in S.174-177 on how to take account of biodiversity interests in planning decisions and the framework that local authorities should provide to assist developers.

### **Internationally and Nationally Designated Sites**

The ES should thoroughly assess the potential for the proposal to affect designated sites. European sites (e.g. designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2017 (as amended). In addition paragraph 176 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites.

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) an appropriate assessment needs to be undertaken in respect of any plan or project which is (a) likely to have a significant effect on a European site (either alone or in combination with other plans or projects) and (b) not directly connected with or necessary to the management of the site.

Should a Likely Significant Effect on a European/Internationally designated site be identified or be uncertain, the competent authority (in this case the Local Planning Authority) may need to prepare an Appropriate Assessment, in addition to consideration of impacts through the EIA process.

We note that a Habitats Regulations Assessment will be prepared for this scheme.

### **Sites of Special Scientific Interest (SSSIs) and sites of European or international importance (Special Areas of Conservation, Special Protection Areas and Ramsar sites)**

In addition to the site specific comments, the environmental statement should include the following information:

Details of the potential direct and indirect impacts to designated sites from the proposal. These could result from, for example, direct land take, loss or alteration of habitats during construction and operation, impacts to functionally linked land for the SPAs and Ramsar Sites, air quality impacts (from dust, traffic for example), water quality, noise, lighting, visual and recreational disturbance and impacts to species associated with the designated sites).

Comprehensive details of how the project has been designed to avoid and fully mitigate all direct and indirect impacts on the designated sites and, in the case of the SPAs and Ramsar Sites, functionally linked land.

Natural England would be pleased to provide more detailed advice to the applicant on the scope and methodology for the specific surveys required in relation to all of the designated sites, We would urge the applicant to engage further with Natural England and other consultees as soon as possible to ensure that the studies are sufficiently robust to inform the environmental statement.

Based upon the information provided, the proposal has the potential to directly or indirectly impact the following statutory designated sites:

### **Arun Valley Special Protection Area , Special Area of Conservation and Ramsar Site**

Key impacts include changes/losses of the floodplain impacting the tidal influence of the River Arun and the Arun Valley which is within this catchment. An assessment of Functionally Linked Land is also required to assess impacts for species for which the designated site is notified. Impacts should be assessed in combination with other Plans or Projects.

### **Singleton and Cocking Railway Tunnel Special Area of Conservation**

Key Impacts include severance/loss of key Functionally Linked Habitats -flightlines and foraging habitat between the scheme and the hibernation site.

### **The Mens Special Area of Conservation**

Key Impacts include severance/loss of key Functionally Linked Habitats for Annex II species and foraging habitat between the scheme and the hibernation site

### **Ebernoe Common Special Area of Conservation**

Key Impacts include severance of key Functionally Linked Habitats -flightlines and foraging habitat between the scheme and the hibernation site

We welcome reference to the Sussex Bat SAC Planning and Landscape Scale Enhancement Protocol.

### **Arundel Park SSSI**

Although direct impacts are unlikely, indirect impacts must be fully assessed.

- Further information on the SSSI and its special interest features can be found at [www.magic.gov](http://www.magic.gov). The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects.
- European site conservation objectives are available on our internet site <http://publications.naturalengland.org.uk/category/6490068894089216>

### **Ancient woodland and veteran trees**

We note that the scheme avoids ancient woodland however as we have advised, it will have significant severance impacts, which severely compromise the ability of key interconnected ancient woodland blocks to function. This area contains a complex of ancient woodland of considerable significance, with an outstanding assemblage of species.

Furthermore the report states that

*There is potential for ancient or veteran trees of up to national importance to be present within the study area.*

Ancient and veteran trees are of national importance. We confirm that the Study area contains several ancient/veteran trees and we note with concern that the Study cannot confirm whether they will be lost/impacted by the scheme. We refer you to the following within the National Policy Statement for National Networks:

*5.32 Ancient woodland is a valuable biodiversity resource both for its diversity of species and for its longevity as woodland. Once lost it cannot be recreated. The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of irreplaceable habitats including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the national need for and benefits of the development, in that location, clearly outweigh the loss. Aged or veteran trees found outside ancient woodland are also particularly valuable for biodiversity and their loss should be avoided. Where such trees would be*

*affected by development proposals, the applicant should set out proposals for their conservation or, where their loss is unavoidable, the reasons for this.*

The above includes not only direct loss but deterioration. We have consistently advised that the Arundel Bypass introduces a permanent severing impact to an existing permeable quality habitat complex which will significantly affect bat flightlines and the ability of the woodland and surrounding ecosystems to function in the landscape. The severing impact of the bypass must be an overarching principle of the ES as it is a critical impact of the scheme in this exceptional environment.

The NPS states the following:

*5.26 In taking decisions, the Secretary of State should ensure that appropriate weight is attached to designated sites of international, national and local importance, protected species, habitats and other species of principal importance for the conservation of biodiversity, and to biodiversity and geological interests within the wider environment*

### Assessment of Severance

We note that an assessment of the functionality of these habitats has not been included. Indeed, it is not clear how this key assessment will take place through the EIA. For example, hedgerow habitats form fundamental habitat links through the landscape, contributing to the resilience of ecosystems. This is not captured in the Report and must form an overarching factor from which to judge the scale of impact of this scheme.

### **Regionally and Locally Important Sites**

The Bypass will affect a number of Local Wildlife Sites notably Binsted Woods and Rewell Woods. Binsted Woods complex contains a significant assemblage of bats, priority habitats, and priority and protected species.

The EIA will need to consider any impacts upon local wildlife and geological sites. Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites. They are of county importance for wildlife or geodiversity. The Environmental Statement should therefore include an assessment of the likely impacts on the wildlife and geodiversity interests of such sites.

These key biodiversity assets need to be fully assessed in the ES. The scheme, which lies immediately adjacent to these important sites will have a permanent and significant impact.

The assessment should include proposals for mitigation of any impacts and if appropriate, compensation measures. Contact the local wildlife trust, geoconservation group or local sites body in this area for further information.

**Protected Species - Species protected by the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017 (as amended)**

## Bats

The area has been shown to be of international significance for bats with at least 14 species present. The woodland is known to contain maternity roosts for two 'Annex II' species of bat (barbastelle and bechstein's) and also of an 'Annex IV' species which is currently considered to be extremely rare in England, the alcahoie bat. Furthermore, Greater Horseshoe bats have been recorded. We have advised that the presence of maternity roosts for these rare bat species is of exceptional significance and, together with the wider bat species assemblage, indicates the landscape as being of the highest quality. The interconnected mosaic of long-established habitats represents crucial supporting habitats for these species. The impact of severance of these habitats for bat species therefore clearly requires particular consideration to ensure that the species present are not adversely affected by the proposals. The impacts to bats from with regards to barrier effects, collision mortality, habitat fragmentation and edge effects are considerable.

We have highlighted that early and thorough assessment and impacts to bats is particularly important as it is unclear how the required level of confidence in the efficacy of avoidance, mitigation and/or compensation measures can be demonstrated given the clear significance of this area, and the lack of clear evidence to support the effectiveness of such measures. We have advised HE that this presents a significant risk to the viability of the scheme and invited urgent consultation with regard to this matter. To this end we welcome that HE has approached NE for comment on bat surveys and mitigation.

We welcome the radio-tracking surveys which have been conducted for bats. These highlight the permeability of this landscape, rich in opportunities for roosting and foraging. It is of critical importance that this permeability is maintained and that Highways England can demonstrate that they have followed the mitigation hierarchy to ensure that the least damaging route is chosen.

### Design, mitigation and enhancement measures

We advise that the risk of mitigation efficacy is highlighted. For example the efficacy of wildlife crossings for bats is widely debated and far from certain. We therefore advise that this significant risk is given due weight in the review of mitigation complexity.

The ES should assess the impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats). does not hold comprehensive information regarding the locations of species protected by law, but advises on the procedures and legislation relevant to such species. Records of protected species should be sought from appropriate local biological record centres, nature conservation organisations, groups and individuals; and consideration should be given to the wider context of the site for example in terms of habitat linkages and protected species populations in the wider area, to assist in the impact assessment.

The conservation of species protected by law is explained in Part IV and Annex A of Government Circular 06/2005 *Biodiversity and Geological Conservation: Statutory Obligations and their Impact within the Planning System*. The area likely to be affected by the proposal should be thoroughly surveyed by competent ecologists at appropriate times of year for relevant species and the survey results, impact assessments and appropriate accompanying mitigation strategies included as part of the ES.

Surveys should always be carried out in optimal survey time periods and to current guidance by suitably qualified and where necessary, licensed, consultants. NE has adopted [standing advice](#) for protected species which includes links to guidance on survey and mitigation.

### **Habitats and Species of Principal Importance**

We advise that the ES should thoroughly assess the impact of the proposals on habitats and/or species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List,

published under the requirements of S41 of the Natural Environment and Rural Communities (NERC) Act 2006.

The area directly affected by and surrounding the Arundel Bypass contains a suite of priority habitats and key notable species assemblages within them. These habitats form networks throughout the landscape which further adds to their importance. The scheme will directly and indirectly affect these species and the EIA must contain robust information regarding how impacts will follow the requirements of the mitigation hierarchy of avoiding and mitigating impacts as a priority. Section 40 of the NERC Act 2006 places a general duty on all public authorities, including local planning authorities, to conserve and enhance biodiversity. Further information on this duty is available here <https://www.gov.uk/guidance/biodiversity-duty-public-authority-duty-to-have-regard-to-conserving-biodiversity>.

We note with concern that the importance of a number of these Habitats of Principle Importance has been incorrectly classified in the EIA Scope and this needs to be urgently addressed.

#### Table 20-corrections to classification of habitats

Table 20 contains a number of errors that incorrectly diminishes the importance of key and priority habitats.

Examples include:

- Deciduous Woodland,
- Wet Woodland,
- Traditional Orchards,
- Hedgerows,
- Coastal Floodplain and Grazing Marsh,
- Rivers,
- Ponds ,
- Coastal Saltmarsh,
- Arable Field Margins.

The above are of national importance. It is not appropriate to attribute condition of these habitats as a factor of their importance, it is the habitats per se that are significant.

The term *watercourse* has also been identified as local. It is NE's understanding that a chalk stream is present within the Area of Study and this must be included here. Furthermore, the documents describe Fen Habitat which is not on this list and is also a habitat of principle importance.

If the importance of habitats and species are inaccurately reported any associated assessment of significance of impact and level mitigation required will also be inadequate.

The Scoping Report states that:

*9.8.5. The significance of ecological effects will depend upon the importance of ecological features and the level of impact to them.*

This information is used to inform the *Significance Matrix* in Table 23 and it is therefore of critical importance that the habitats and species affected are accurately represented in this assessment. We reiterate that this area contains a rich array of key and propriety habitats, which support nationally/internationally important species assemblages. The significance and magnitude of impact of the scheme both directly and indirectly must be appropriately assessed.

#### Assessment of Severance

We note that an assessment of the functionality of these habitats has not been included. Indeed, it is not clear how this key assessment will take place through the EIA. For example, hedgerow habitats form critical habitat links through the landscape contributing to the resilience of ecosystems. This is not captured in the Report and must form an overarching factor from which to judge the scale

of impact of this scheme.

Furthermore, we have advised that the area is of international significance for bats and this should be reflected in Table 21.

Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration...in the making of planning decisions'. NE therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the ES. Consideration should also be given to those species and habitats included in the relevant Local BAP.

Natural England advises that a habitat survey (equivalent to Phase 2) is carried out on the site, in order to identify any important habitats present. In addition, ornithological, botanical and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present. The Environmental Statement should include details of:

- Any historical data for the site affected by the proposal (e.g. from previous surveys);
- Additional surveys carried out as part of this proposal;
- The habitats and species present;
- The status of these habitats and species (e.g. whether priority species or habitat);
- The direct and indirect effects of the development upon those habitats and species;
- Full details of any mitigation or compensation that might be required.

The development should seek if possible to avoid adverse impacts on sensitive areas for wildlife within the site, and if possible provide opportunities for overall wildlife gain.

The record centre for the relevant Local Authorities should be able to provide the relevant information on the location and type of priority habitat for the area under consideration.

### **Contacts for Local Records**

Natural England does not hold local information on local sites, local landscape character and local or national biodiversity priority habitats and species. We recommend that you seek further information from the appropriate bodies (which may include the local records centre, the local wildlife trust, local geoconservation group or other recording society and a local landscape characterisation document).

### **Designated Landscapes and Landscape Character**

#### **Nationally Designated Landscapes**

We advise that the scheme will have significant impacts to the South Downs National Park. As the scheme is within the setting of The South Downs National Park, consideration should be given to the direct and indirect effects upon this designated landscape and in particular the effect upon its purpose for designation within the Environmental Impact Assessment, as well as the content of the relevant management plan for The South Downs National Park.

#### **Detailed advice on Landscape Assessment**

The Arundel Bypass scheme has significant impacts to the setting and Special Qualities of The South Downs National Park. The scheme will sever Arundel from its valley and impact on the National Park's statutory purpose. The will result in the direct loss of key landscape features, the severance of others e.g. hedgerows, ancient woodland blocks which contribute to the special qualities of the national park. The statutory purposes of the national park will therefore be adversely effected

The prime statutory purpose of the SDNP is the conservation and enhancement of the natural beauty of the designation. Natural beauty manifests itself differently in each National Park (and AONB) and is often expressed in terms of the special qualities of the designation. These frequently

take the form of statements or descriptions and are clearly set out in the designation's Management Plan.

NE advises that the EIA must include a clear assessment of the effect of the scheme on these special qualities. We therefore welcome 8.8.3 which confirms that this will be included in the EIA. We would welcome consultation regarding the viewpoints.

We welcome that the impact on tranquillity will be assessed in the EIA and that agreement will be sought on the location locations for photomontages.

We note 5.12 which states that

*Ongoing engagement will be undertaken with the SDNP Authority to ensure that the special qualities are considered as part of the PCF Stage 3 design development.*

As the statutory adviser for Landscape Natural England would also wish to be consulted on this matter.

The National Networks National Policy Statement is clear:

*5.154 The duty to have regard to the purposes of nationally designated areas also applies when considering applications for projects outside the boundaries of these areas which may have impacts within them. The aim should be to avoid compromising the purposes of designation...*

In undertaking the EIA NE advises that HE should pay close regard to the policy tests contained in the NPS and clearly set out how the scheme's design principals will address these.

The NPS also requires a scheme to be of 'good design'. Para. 4.28 states;  
*'Applicants should include design as an integral consideration from the outset of a proposal'*.  
Whilst para. 4.29 states;

*'Visual appearance should be a key factor in considering the design of new infrastructure, as well as functionality, fitness for purpose, sustainability and cost. Applying "good design" to national network projects should therefore produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible'*.

### **Landscape and visual impacts**

NE would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The EIA should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography.

The EIA should include a full assessment of the potential impacts of the development on local landscape character using [landscape assessment methodologies](#). We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.

NE supports the publication *Guidelines for Landscape and Visual Impact Assessment*, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment.

### **8.6. Design, mitigation and enhancement measures**

We welcome an environmentally led design process as stated in 8.6.1. We however do not agree that *this has already been demonstrated via the preferred route announcement avoiding the SDNP*

*and areas of ancient woodland.*

NE clearly advised that the Online options for this scheme presented the least damaging options for environment and landscape. Although the scheme avoids *direct* impact on ancient woodland the chosen route will have significant impacts on a National park and an extraordinary environment, which the EIA must fully address.

In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The EIA process should detail the measures to be taken to ensure the building design will be of a high standard, as well as detail of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

The assessment should refer to the relevant [National Character Areas](#) which can be found on our website. Links for Landscape Character Assessment at a local level are also available on the same page.

### **Heritage Landscapes**

You should consider whether there is land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific or historic interest. An up-to-date list may be obtained at [www.hmrc.gov.uk/heritage/lbsearch.htm](http://www.hmrc.gov.uk/heritage/lbsearch.htm).

### **Access and Recreation**

Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate.

### **Rights of Way, Access land, Coastal access and National Trails**

The EIA should consider potential impacts on access land, public open land, rights of way and coastal access routes in the vicinity of the development. We also recommend reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

### **Soil and Agricultural Land Quality**

Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 170 of the NPPF. We also recommend that soils should be considered in the context of the sustainable use of land and the ecosystem services they provide as a natural resource, as also highlighted in paragraph 170 of the NPPF.

### **Air Quality**

Air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example over 97% of sensitive habitat area in England is predicted to exceed the critical loads for ecosystem protection from atmospheric nitrogen deposition ([England Biodiversity Strategy](#), Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments

which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land.

The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System ([www.apis.ac.uk](http://www.apis.ac.uk)). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

### **Climate Change Adaptation**

The [England Biodiversity Strategy](#) published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' ([NPPF](#) Para 174), which should be demonstrated through the ES.

The Arundel Bypass introduces a permanent major severance of a highly sensitive landscape habitats such as ancient woodland, and wetlands. We have advised that this will have a major impact on a functioning ecosystem. This severing impact affects the resilience and ability of habitats and species to adapt to climate change. Furthermore, the severance and loss of the floodplain will have impacts regarding flood storage and the functioning of the floodplain. The impact of this must be considered with climate change forecasts. We have advised that both the impact of introducing an embankment into the floodplain, and the costs associated with compensatory flood storage and habitat creation will be considerable.

### **Contribution to local environmental initiatives and priorities**

A two year project, the Arun Valley Vision, was set up as a community-led partnership project to develop a sustainable long-term vision for the Lower Arun Valley, aiming to provide a landscape-wide context for the consideration of flood management issues and identifying a balance between the needs of conservation, land management and protection of people and properties.

The outputs and recommendations of the project<sup>3</sup> should be considered with the ES and in particular the preferred approach of adaptive management which recognises the significance of the valley and sets out targeted interventions to increase flood resilience and facilitate adaptation to climate change and sea level rise.

### **Cumulative and in-combination effects**

A full consideration of the implications of the whole scheme should be included in the ES. All supporting infrastructure should be included within the assessment.

The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

- a. existing completed projects;
- b. approved but uncompleted projects;
- c. ongoing activities;
- d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- e. plans and projects which are reasonably foreseeable, i.e. projects for which an application has not yet been submitted, but which are likely to progress before completion of the

---

<sup>3</sup> [www.avg.co.uk](http://www.avg.co.uk)

development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

This section which includes in-combination and cumulative assessments does not appear to include consideration of the impact of Rampion II NSIP for the Arundel Bypass scheme. It will be of key importance to include this project, specifically the requirements for cable infrastructure in the vicinity of the Arundel Bypass.

## **Environmental Net Gain**

In addition to the required mitigation and compensatory measures for impacts to biodiversity and landscape and functioning floodplain assets from the Arundel Bypass, NE recommends that the scheme should deliver a net benefit for biodiversity and the wider environment. Such enhancements should demonstrate an integrated approach considering landscape, terrestrial and aquatic and habitats and species. In our letter of 13<sup>th</sup> August The Defra family has advised:

*that in line with your organisation's own targets and license to operate, and in recognition of the particular significance of this area, that any scheme demonstrates a clear ability to deliver considerable net gain.*

*We would wish to see any scheme seek to provide a betterment from the existing baseline. Notably we have advised that we would wish to see improved connectivity of habitats across the existing A27 route.*

The ES should fully detail the environmental net gains that will be provided by the applicant.

NE advises that positive environmental outcomes should be delivered from major infrastructure developments. Nationally Significant Infrastructure Projects can make a significant contribution to delivering the environmental ambition in the Government's 25 Year Environment Plan. This aims to deliver an environmental net gain through development and infrastructure.

In addition, Paragraph 175 of the NPPF provides guidance that when considering planning applications, the planning authority should apply the following principles:

'd) ... while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.'

We would encourage the applicant to work closely with other major projects for example Rampion II to deliver a coherent, landscape scale mitigation and enhancement strategy.

Where habitat compensation will be required for any of the habitats or species impacted by the development, the long-term security and management of the site(s) needs to be secured and we recommend that the mechanism for this should be detailed within the ES.



Public Health  
England

Environmental Hazards and  
Emergencies Department  
Centre for Radiation, Chemical and  
Environmental Hazards (CRCE)  
Seaton House  
City Link  
London Road  
Nottingham  
NG2 4LA

[nsipconsultations@phe.gov.uk](mailto:nsipconsultations@phe.gov.uk)

[www.gov.uk/phe](http://www.gov.uk/phe)

Your Ref: TR010045-000009

Our Ref: 56974\_CIRIS

Ms Karen Wilkinson  
The Planning Inspectorate,  
Environmental Services,  
Central Operations,  
Temple Quay House,  
2, The Square,  
Bristol BS1 6PN

31<sup>st</sup> March 2021

Dear Ms Wilkinson

**Nationally Significant Infrastructure Project  
A27 Arundel Bypass; TR010045  
Scoping Consultation Stage**

Thank you for including Public Health England (PHE) in the scoping consultation phase of the above application. Advice offered by PHE is impartial and independent.

PHE exists to protect and improve the nation's health and wellbeing and reduce health inequalities; these two organisational aims are reflected in the way we review and respond to Nationally Significant Infrastructure Project (NSIP) applications.

The health of an individual or a population is the result of a complex interaction of a wide range of different determinants of health, from an individual's genetic make-up, to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. All developments will have some effect on the determinants of health, which in turn will influence the health and wellbeing of the general population, vulnerable groups and individual people. Although assessing impacts on health beyond direct effects from for example emissions to air or road traffic incidents is complex, there is a need to ensure a proportionate assessment focused on an application's significant effects.

Having considered the submitted scoping report we wish to make the following specific comments and recommendations:

**Environmental Public Health**

We understand that the promoter will wish to avoid unnecessary duplication and that many issues including air quality, emissions to water, waste, contaminated land etc. will be covered elsewhere in the Environmental Statement (ES). We believe the summation of relevant issues into a specific

V1.0 March 2021

section of the report provides a focus which ensures that public health is given adequate consideration. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.

In terms of the level of detail to be included in an ES, we recognise that the differing nature of projects is such that their impacts will vary. The attached appendix summarises PHE's requirements and recommendations regarding the content of and methodology used in preparing the ES. Please note that where impacts relating to health and/or further assessments are scoped out, promoters should fully explain and justify this within the submitted documentation.

We note the applicant's intention to 'scope out' the assessment of PM<sub>2.5</sub> emissions and concentration changes from the ES. PHE considers that this assessment should be provided to allow an assessment of the potential population health impacts in line with our position, below.

We also note the applicant's proposed baseline year for the traffic model and Air Quality Impacts Assessment is 2015. The rationale for this selection is unclear; in addition to the 'committed development' assessments proposed, the ES should detail the assumptions made in developing the subsequent traffic models, particularly around vehicle numbers and emission characteristics.

### **Recommendation**

Our position is that pollutants associated with road traffic or combustion, particularly particulate matter and oxides of nitrogen are non-threshold; i.e., an exposed population is likely to be subject to potential harm at any level and that reducing public exposures of non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits.

We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure), maximise co-benefits (such as physical exercise). We encourage their consideration during development design, environmental and health impact assessment, and development consent.

The applicant cites guidance in screening out any radiation impacts from assessment in the ES. The Scoping Consultation does not specifically reference Electric and Magnetic Fields (EMF); these may be of concern should the scheme require the relocation or diversion of electrical substations, overhead power lines or underground cables. Details are provided within the Appendix to this letter.

### **Recommendation**

We request that the ES clarifies the assessment of EMF. The proposer should confirm either that the proposed development does not lead to any impact on receptors from potential sources of EMF; or ensure that an adequate assessment of the possible impacts is undertaken and included in the ES.

## **Human Health and Wellbeing**

This section of PHE's scoping response, identifies the wider determinants of health and wellbeing we expect the ES to address, to demonstrate whether they are likely to give rise to significant effects. PHE has focused its approach on scoping determinants of health and wellbeing under four

themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. The four themes are:

- Access
- Traffic and Transport
- Socioeconomic
- Land Use

Having considered the submitted scoping report PHE wish to make the following specific comments and recommendations:

## **Population and human health**

### **Mental health**

The scoping report does not reference the broad definition of health proposed by the World Health Organisation (WHO) and does not include reference to any mental health indicators or effects.

Mental well-being is fundamental to achieving a healthy, resilient and thriving population. It underpins healthy lifestyles, physical health, educational attainment, employment and productivity, relationships, community safety and cohesion and quality of life. A scheme of this scale and nature has impacts on the over-arching protective factors, which are:

- • Enhancing control
- • Increasing resilience and community assets
- • Facilitating participation and promoting inclusion.

### Recommendation

We would recommend the use of the broad definition of health proposed by the World Health Organisation (WHO) and we welcome a specific reference to mental health.

There should be parity between mental and physical health, and any assessment of health impact should include the appreciation of both. A systematic approach to the assessment of the effects on mental health, including suicide, is required.

The ES should reference the methodology used to complete assessments for the effects on mental health and wellbeing. The Mental Well-being Impact Assessment (MWIA), could be used as a methodology. The assessment should identify vulnerable populations and provide clear mitigation strategies that are adequately linked to any local services or assets

### **Vulnerable populations**

An approach to the identification of vulnerable populations was provided as part of the health baseline data. The impacts on health and wellbeing and health inequalities of the scheme may have particular effect on vulnerable or disadvantaged populations, including those that fall within the list of protected characteristics. The scoping report identifies local inequalities and it would be important to map impacts across these inequalities.

### Recommendation

The ES should continue the initial identification of baseline data encompassing deprivation, demographics and other socio-economic factors. Local inequalities should be identified and the ES should highlight where the scheme may increase or decrease local inequalities.

## **Physical activity / access to open space**

The scoping report identifies how walkers, cyclists and horse riders (WCH) will be impacted through the loss or change in formal Public Rights of Way (PRoW), open space and the existing road network. It is important that any changes have a positive long term effect where possible. We welcome the schemes opportunity to enhance the existing infrastructure that supports active travel and physical activity through reducing severance but also opportunities for improvements to the existing A27.

We note the requirement for the loss of public open space and would expect the ES to assess the impact of this loss and any mitigation measures. The ES should identify levels of usage and demand on this space and how this may impact on the local community and any inequality of access.

#### Recommendations

The ES should identify levels of usage and demand on any lost open space and how this may impact on the local community and any inequality of access for the local communities.

Yours sincerely,

For and on behalf of Public Health England  
[nsipconsultations@phe.gov.uk](mailto:nsipconsultations@phe.gov.uk)

*Please mark any correspondence for the attention of National Infrastructure Planning Administration.*

## **Appendix: PHE recommendations regarding the scoping document**

### **Introduction**

The Planning Inspectorate's Advice Note 11: Working with Public Bodies covers many of the generic points of interaction relevant to the Planning Inspectorate and Public Health England (PHE). The purpose of this Annex is to help applicants understand the issues that PHE expect to see addressed by applicants preparing an Environmental Statement (ES) as part of their Nationally Significant Infrastructure Planning (NSIP) submission.

We have included a comprehensive outline of the type of issues we would expect to be considered as part of an NSIP which falls under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations). PHE encourages applicants to contact us as early in the process as possible if they wish to discuss or clarify any matters relating to chemical, poison, radiation or wider public health.

### **General Information on Public Health England**

PHE was established on 1 April 2013 to bring together public health specialists from more than 70 organisations into a single public health service. We are an executive agency of the Department of Health and are a distinct delivery organisation with operational autonomy to advise and support government, local authorities and the National Health Service (NHS) in a professionally independent manner.

We work closely with public health professionals in Wales, Scotland and Northern Ireland, and internationally.<sup>1</sup> We have specialist teams advising on specific issues and the potential impacts arising from environmental public health including chemicals, noise, air quality, ionising and non-ionising radiation.

### **PHE's NSIP roles and responsibilities**

PHE is a statutory consultee in the NSIP process for any *applications likely to involve chemicals, poisons or radiation which could potentially cause harm to people and are likely to affect significantly public health.*<sup>2</sup> PHE will consider potential significant effects (direct and indirect) of a proposed development on population and human health and the impacts from chemicals, radiation and environmental hazards. We also consider other factors which may have an impact on public health, such as the wider determinants of health, health improvement and health inequalities (where PHE has a legal duty specified in the Health and Social Care Act 2012)<sup>3</sup>.

Under certain circumstances PHE may provide comments on radiation on behalf of the Scottish Government. If a proposer is submitting a planning application in Scotland which may require advice on radiation you are recommended to contact the appropriate Scottish Planning Authority for advice on how to proceed.

In the case of applications in Wales, PHE remains a statutory consultee but the regime applies to a more limited range of development types. For NSIP applications likely to affect land in Wales, an applicant should still consult PHE but, additionally will be required to consult the Welsh Government.

### **Environmental Impact Assessments – PHE Responsibilities**

---

<sup>1</sup> <https://www.gov.uk/government/organisations/public-health-england/about#priorities>

<sup>2</sup> The Infrastructure Planning (Interested Parties and Miscellaneous Prescribed Provisions) Regulations 2015

<sup>3</sup> <http://www.legislation.gov.uk/ukpga/2012/7/contents/enacted>

PHE has a statutory role as a consultation body under the EIA Regulations. Where an applicant has requested a scoping opinion from the Planning Inspectorate<sup>4</sup>, PHE will be consulted regarding the scope, and level of detail, of the information to be provided in the ES. PHE has a duty to make information available to the applicant.

PHE provides advice relating to EIA within this document and during the NSIP consultation stages. PHE encourages applicants to discuss the scope of the ES with us at an early stage to explore, for example, whether careful site selection or other design issues could minimise or eliminate public health impacts or to outline the requirement for, scope and methodology of any assessments related to public health. PHE's standard recommendations in response to EIA scoping consultations are below.

## **PHE's recommendations to applicants regarding Environmental Impact Assessments**

### **General approach**

PHE provides advice relating to EIA within this document and during the NSIP consultation stages. It is the role of the applicant to prepare the ES.

When preparing an ES the applicant should give consideration to best practice guidance such as the Government's Handbook for scoping projects: environmental impact assessment<sup>5</sup>, and Guidance: on Environmental Impact Assessment<sup>6</sup>

The [Planning Inspectorate's Advice Note Seven](#): Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements also provide guidance to applicants and other persons with interest in the EIA process as it relates to NSIPs. It is important that the submitted ES identifies and assesses the potential public health impacts of the activities at, and emissions from, the development.

**Applicants are reminded that Section 5(2)(a) of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 specifically includes a requirement that the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on population and human health.**

PHE is of the opinion that this requirement encompasses the wider determinants of public health, as well as chemicals, poisons and radiation. Further information on PHE's recommendations and requirements is included below.

PHE understands that there may be separate sections of the ES covering the assessment of impacts on air, land, water and so on, but expects an ES to include a specific section summarising potential impacts on population and health. This section should bring together and interpret the information from other assessments as necessary. The health, wellbeing and population impacts section should address the following steps.

1. Screening: Identify any significant effects.

<sup>4</sup> The scoping process is administered and undertaken by the Planning Inspectorate on behalf of the Secretary of State

<sup>5</sup> <https://www.gov.uk/government/publications/handbook-for-scoping-projects-environmental-impact-assessment>

<sup>6</sup> <https://www.gov.uk/guidance/environmental-impact-assessment#the-purpose-of-environmental-impact-assessment>

- a. Summarise the methodologies used to identify health impacts, assess significance and sources of information
  - b. Evaluate any reference standards used in carrying out the assessment and in evaluating health impacts (e.g., environmental quality standards)
  - c. Where the applicant proposes the 'scoping out' of any effects a clear rationale and justification should be provided along with any supporting evidence.
2. Baseline Survey:
- a. Identify information needed and available, evaluate quality and applicability of available information
  - b. Undertake assessment
3. Alternatives:
- a. Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, the EIA process should start at the stage of site selection, so that the environmental merits of practicable alternatives can be properly considered. Where this is undertaken, the main alternatives considered should be outlined in the ES<sup>7</sup>.
4. Design and assess possible mitigation
- a. Consider and propose suitable corrective actions should mitigation measures not perform as effectively predicted.
5. Impact Prediction: Quantify and Assess Impacts:
- a. Evaluate and assess the extent of any positive and negative effects of the development. Effects should be assessed in terms of likely health outcomes, including those relating to the wider determinants of health such as socio-economic outcomes, in addition to health outcomes resulting from exposure to environmental hazards. Mental health effects should be included and given equivalent weighting to physical effects.
  - b. Clearly identify any omissions, uncertainties and dependencies (e.g., air quality assessments being dependant on the accuracy of traffic predictions)
  - c. Evaluate short-term impacts associated with the construction and development phase
  - d. Evaluate long-term impacts associated with the operation of the development
  - e. Evaluate any impacts associated with decommissioning of the development
  - f. Evaluate any potential cumulative impacts as a result of the development, currently approved developments which have yet to be constructed, and proposed developments which do not currently have development consent
6. Monitoring and Audit
- a. Identify key modelling predictions and mitigation impacts and consider implementing monitoring and audit to assess their accuracy / effectiveness.

Any assessments undertaken to inform the ES should be proportionate to the potential impacts of the proposal, therefore we accept that, in some circumstances particular assessments may not be relevant to an application, or that an assessment may be adequately completed using a qualitative rather than quantitative methodology. In cases where this decision is made, the applicant should fully explain and justify their rationale in the submitted documentation.

## Human and environmental receptors

<sup>7</sup> DCLG guidance, 1999 <http://www.communities.gov.uk/documents/planningandbuilding/pdf/155958.pdf>

The applicant should clearly identify the development's location and the distance of the development to off-site receptors that may be affected by emissions from, or activities at, the development. Off-site receptors may include people living in residential premises; people working in commercial, and industrial premises and people using transport infrastructure (such as roads and railways), recreational areas, and publicly-accessible land.

Identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities, as well as other vulnerable population groups such as those who are young, older, with disabilities or long-term conditions, or on low incomes) in the area(s) which may be affected by emissions, this should include consideration of any new receptors arising from future development

Consideration should also be given to environmental receptors such as the surrounding land, watercourses, surface and groundwater, and drinking water supplies such as wells, boreholes and water abstraction points.

### **Impacts arising from construction and decommissioning**

Any assessment of impacts arising from emissions or activities due to construction and decommissioning should consider potential impacts on all receptors and describe monitoring and mitigation during these phases. Construction and decommissioning will be associated with vehicle movements and cumulative impacts should be accounted for.

We would expect the applicant to follow best practice guidance during all phases from construction to decommissioning to ensure appropriate measures are in place to mitigate any potential negative impact on health from emissions (point source, fugitive and traffic-related) and activities. An effective Construction Environmental Management Plan (CEMP) (and Decommissioning Environmental Management Plan (DEMP)) will help provide reassurance that activities are well managed. The applicant should ensure that there are robust mechanisms in place to respond to any complaints made during construction, operation, and decommissioning of the facility.

### **Emissions to air and water**

PHE has a number of comments regarding the assessment of emissions from any type of development in order that the ES provides a comprehensive assessment of potential impacts.

When considering a baseline (of existing environmental quality) and in the assessment and future monitoring of impacts these should:

- include an evaluation of the public health benefits of development options which reduce air pollution – even below limit values – as pollutants such as nitrogen dioxide and particulate matter show no threshold below which health effects do not occur;<sup>8, 9</sup>
- consider the construction, operational, and decommissioning phases;
- consider the typical operational emissions and emissions from start-up, shut-down, abnormal operation and accidents when assessing potential impacts and include an assessment of worst-case impacts;
- fully account for fugitive emissions;
- include appropriate estimates of background levels (i.e., when assessing the human health risk of a chemical emitted from a facility or operation, background exposure to the chemical from other sources should be taken into account);

---

<sup>8</sup> <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

<sup>9</sup>

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/795185/Review\\_of\\_interventions\\_to\\_improve\\_air\\_quality.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795185/Review_of_interventions_to_improve_air_quality.pdf)

- encompass the combined impacts of all pollutants which may be emitted by the development with all pollutants arising from associated development and transport, considered in a single holistic assessment (i.e., of overall impacts);
- identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities) in the area(s) which may be affected by emissions. This should include consideration of any new receptors arising from future development;
- identify cumulative and incremental impacts (i.e., assess cumulative impacts from multiple sources), including those arising from associated development, other existing and proposed development in the local area, and new vehicle movements associated with the proposed development; associated transport emissions should include consideration of non-road impacts (i.e., rail, sea, and air);
- compare predicted environmental concentrations to the applicable standard or guideline value for the affected medium. Where available, the most recent UK standards for the appropriate media (i.e., air, water, and/or soil) and health-based guideline values should be used when quantifying the risk to human health from chemical pollutants;
- where UK standards or guideline values are not available, or other reputable International bodies e.g. European Union or OECD:
  - If no standard or guideline value exists, the predicted exposure to humans should be estimated and compared to an appropriate health-based value (e.g., a Tolerable Daily Intake or equivalent);
  - This should consider all applicable routes of exposure (e.g., include consideration of aspects such as the deposition of chemicals emitted to air and their uptake via ingestion).
- include appropriate screening assessments and detailed dispersion modelling where this is screened as necessary;
- include Chemical Abstract Service (CAS) numbers alongside chemical names, where referenced in the ES;
- include consideration of local authority, Environment Agency, Natural Resources Wales, Defra national network, and any other local site-specific sources of monitoring data;
- when quantitatively assessing the health risk of genotoxic and carcinogenic chemical pollutants, PHE does not favour the use of mathematical models to extrapolate from high dose levels used in animal carcinogenicity studies to well below the observed region of a dose-response relationship. When only animal data are available, we recommend that the Committee on Carcinogenicity of Chemicals approach<sup>10</sup> is used.

Whilst screening of impacts using qualitative methodologies is common practice (eg, for impacts arising from fugitive emissions such as dust), where it is possible to undertake a quantitative assessment of impacts then this should be undertaken.

PHE's view is that the applicant should appraise and describe the measures that will be used to control both point source and fugitive emissions and demonstrate that standards, guideline values or health-based values will not be exceeded due to emissions from the installation, as described above. This should include consideration of any emitted pollutants for which there are no set emission limits. When assessing the potential impact of a proposed installation on environmental quality, predicted environmental concentrations should be compared to the permitted concentrations in the affected media; this should include both standards for short and long-term exposure. Further to assessments of compliance with limit values, for non-threshold pollutants (ie, those that have no threshold below which health effects do not occur) the **benefits** of development options which reduce population exposure should be evaluated.

*Additional points specific to emissions to air*

---

<sup>10</sup> <https://www.gov.uk/government/publications/cancer-risk-characterisation-methods>

When considering baseline conditions (of existing air quality) and the assessment and future monitoring of impacts, these should include:

- consideration of impacts on existing areas of poor air quality e.g. existing or proposed local authority Air Quality Management Areas (AQMAs) or Clean Air Zones (CAZ). The applicant should demonstrate close working/consultation with the appropriate local authorities
- modelling using appropriate meteorological data (i.e. from the nearest suitable meteorological station and include a range of years and worst-case conditions)
- modelling taking into account local topography, congestion and acceleration

#### *Additional points specific to emissions to water*

When considering baseline conditions (of existing water quality) and the assessment and future monitoring of impacts, these should:

- include assessment of potential impacts on human health and not focus solely on ecological impacts
- identify and consider all routes by which emissions may lead to population exposure (e.g., surface watercourses, recreational waters, sewers, geological routes etc.)
- assess the potential off-site effects of emissions to groundwater (eg, on aquifers used for drinking water) and surface water (used for drinking water abstraction) in terms of the potential for population exposure
- include consideration of potential impacts on recreational users (eg, from fishing, canoeing etc.) alongside assessment of potential exposure via drinking water

### **Land quality**

We would expect the applicant to provide details of any hazardous contamination present on site (including ground gas) as part of a site condition report and associated risk assessment.

Emissions to and from the ground should be considered in terms of the previous history of the site and the potential of the site, during construction and once operational, to give rise to issues. Public health impacts associated with ground contamination and/or the migration of material off-site should be assessed in accordance with the Environment Agency publication Land Contamination: risk management<sup>11</sup> and the potential impact on nearby receptors; control and mitigation measures should be outlined.

### **Waste**

The applicant should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal).

For wastes arising from the development the ES should assess:

- the implications and wider environmental and public health impacts of different waste disposal options
- disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated

If the development includes wastes delivered to the installation:

- Consider issues associated with waste delivery and acceptance procedures (including delivery of prohibited wastes) and should assess potential off-site impacts and describe their mitigation

### **Other aspects**

Within the ES, PHE would expect to see information about how the applicant would respond to accidents with potential off-site emissions (e.g., flooding or fires, spills, leaks or releases off-site). Assessment of accidents should: identify all potential hazards in relation to construction, operation

---

<sup>11</sup> Available from <https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks>

and decommissioning; include an assessment of the risks posed; and identify risk management measures and contingency actions that will be employed in the event of an accident in order to mitigate off-site effects.

PHE would expect the applicant to consider the COMAH Regulations (Control of Major Accident Hazards) and the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations: both in terms of their applicability to the development itself, and the development's potential to impact on, or be impacted by, any nearby installations themselves subject to these Regulations.

There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report<sup>12</sup>, jointly published by Liverpool John Moores University and the Health Protection Agency (HPA), examined health risk perception and environmental problems using a number of case studies. As a point to consider, the report suggested: "*Estimation of community anxiety and stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard. This is true even when the physical health risks may be negligible.*" PHE supports the inclusion of this information within ES' as good practice.

### **Electromagnetic fields (EMF)**

This advice relates to electrical installations such as substations and connecting underground cables or overhead lines. PHE advice on the health effects of power frequency electric and magnetic fields is available on the Gov.UK website.<sup>13</sup>

There is a potential health impact associated with the electric and magnetic fields around substations, overhead power lines and underground cables. The field strengths tend to reduce with distance from such equipment.

The following information provides a framework for considering the health impact associated with the electric and magnetic fields produced by the proposed development, including the direct and indirect effects of the electric and magnetic fields as indicated above.

### **Policy Measures for the Electricity Industry**

A voluntary code of practice is published which sets out key principles for complying with the ICNIRP guidelines.<sup>14</sup> Companion codes of practice dealing with optimum phasing of high voltage power lines and aspects of the guidelines that relate to indirect effects are also available.<sup>15, 16</sup>

### **Exposure Guidelines**

PHE recommends the adoption in the UK of the EMF exposure guidelines published by the International Commission on Non-ionizing Radiation Protection (ICNIRP). Formal advice to this effect, based on an accompanying comprehensive review of the scientific evidence, was published in 2004 by the National Radiological Protection Board (NRPB), one of PHE's predecessor organisations<sup>17</sup>

---

<sup>12</sup> Available from: [http://allcatsrgrey.org.uk/wp/download/public\\_health/Health-Risk-Perception-Env-Probs.pdf](http://allcatsrgrey.org.uk/wp/download/public_health/Health-Risk-Perception-Env-Probs.pdf)

<sup>13</sup> <https://www.gov.uk/government/collections/electromagnetic-fields#low-frequency-electric-and-magnetic-fields>

<sup>14</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf)

<sup>15</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/48309/1255-code-practice-optimum-phasing-power-lines.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48309/1255-code-practice-optimum-phasing-power-lines.pdf)

<sup>16</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/224766/powerlines\\_vcop\\_microshocks.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224766/powerlines_vcop_microshocks.pdf)

<sup>17</sup>

<http://webarchive.nationalarchives.gov.uk/20140629102627/http://www.hpa.org.uk/Publications/Radiation/NPRBArchive/DocumentsOfTheNRPB/Absd1502/>

Updates to the ICNIRP guidelines for static fields have been issued in 2009 and for low frequency fields in 2010. However, Government policy is that the ICNIRP guidelines are implemented as expressed in the 1999 EU Council Recommendation on limiting exposure of the general public (1999/519/EC).<sup>18</sup>

### **Static magnetic fields**

For static magnetic fields, the ICNIRP guidelines published in 2009 recommend that acute exposure of the general public should not exceed 400 mT (millitesla), for any part of the body, although the previously recommended value of 40 mT is the value used in the Council Recommendation. However, because of potential indirect adverse effects, ICNIRP recognises that practical policies need to be implemented to prevent inadvertent harmful exposure of people with implanted electronic medical devices and implants containing ferromagnetic materials, and injuries due to flying ferromagnetic objects, and these considerations can lead to much lower restrictions, such as 0.5 mT.

### **Power frequency electric and magnetic fields**

At 50 Hz, the known direct effects include those of induced currents in the body on the central nervous system (CNS) and indirect effects include the risk of painful spark discharge on contact with metal objects exposed to electric fields. The ICNIRP guidelines published in 1998 give reference levels for public exposure to 50 Hz electric and magnetic fields, and these are respectively 5 kV m<sup>-1</sup> (kilovolts per metre) and 100 µT (microtesla). The reference level for magnetic fields changes to 200 µT in the revised (ICNIRP 2010) guidelines because of new basic restrictions based on induced electric fields inside the body, rather than induced current density. If people are not exposed to field strengths above these levels, direct effects on the CNS should be avoided and indirect effects such as the risk of painful spark discharge will be small. The reference levels are not in themselves limits but provide guidance for assessing compliance with underlying basic restrictions and reducing the risk of indirect effects.

### **Long term effects**

There is concern about the possible effects of long-term exposure to extremely low frequency electric and magnetic fields, from power lines. In the NRPB advice issued in 2004, it was concluded that the studies that suggest health effects, including those concerning childhood leukaemia in relation to power frequency magnetic fields, could not be used to derive quantitative guidance on restricting exposure. However, the results of these studies represented uncertainty in the underlying evidence base, and taken together with people's concerns, provided a basis for providing an additional recommendation for Government to consider the need for further precautionary measures, particularly with respect to the exposure of children to power frequency magnetic fields.

### **The Stakeholder Advisory Group on ELF EMFs (SAGE)**

SAGE was set up to explore the implications for a precautionary approach to extremely low frequency electric and magnetic fields (ELF EMFs), which include power frequency fields, and to make practical recommendations to Government.<sup>19</sup>

Relevant here is SAGE's 2007 First Interim Assessment, which made several recommendations concerning high voltage power lines. In responding, Government supported the implementation of low cost options such as optimal phasing to reduce exposure; however it did not support the option of creating corridors around power lines in which development would be restricted on health grounds, which was considered to be a disproportionate measure given the evidence base on the

---

<sup>18</sup> [http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/Publichealth/Healthprotection/DH\\_4089500](http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/Publichealth/Healthprotection/DH_4089500)

<sup>19</sup> <http://www.emfs.info/policy/sage/>

potential long term health risks arising from exposure. The Government response to SAGE's First Interim Assessment is available on the national archive website.<sup>20</sup>

The Government also supported calls for providing more information on power frequency electric and magnetic fields, which is available on the PHE web pages.

## **Ionising radiation**

Particular considerations apply when an application involves the possibility of exposure to ionising radiation. In such cases it is important that the basic principles of radiation protection recommended by the International Commission on Radiological Protection<sup>21</sup> (ICRP) are followed. PHE provides advice on the application of these recommendations in the UK. The ICRP recommendations are implemented in the Euratom Basic Safety Standards<sup>22</sup> (BSS) and these form the basis for UK legislation, including the Ionising Radiation Regulations 1999, the Radioactive Substances Act 1993, and the Environmental Permitting Regulations 2016.

As part of the EIA process PHE expects applicants to carry out the necessary radiological impact assessments to demonstrate compliance with UK legislation and the principles of radiation protection. This should be set out clearly in a separate section or report and should not require any further analysis by PHE. In particular, the important principles of justification, optimisation and radiation dose limitation should be addressed. In addition, compliance with the Euratom BSS and UK legislation should be clear.

When considering the radiological impact of routine discharges of radionuclides to the environment PHE would, as part of the EIA process, expect to see a full radiation dose assessment considering both individual and collective (population) doses for the public and, where necessary, workers. For individual doses, consideration should be given to those members of the public who are likely to receive the highest exposures (referred to as the representative person, which is equivalent to the previous term, critical group).

Different age groups should be considered as appropriate and should normally include adults, 1 year old and 10 year old children. In particular situations doses to the fetus should also be calculated<sup>23</sup>.

The estimated doses to the representative person should be compared to the appropriate radiation dose criteria (dose constraints and dose limits), taking account of other releases of radionuclides from nearby locations as appropriate. Collective doses should also be considered for the UK, European and world populations where appropriate.

The methods for assessing individual and collective radiation doses should follow the guidance given in 'Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment August 2012'<sup>24</sup>

---

<sup>20</sup>

[http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_107124](http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107124)

<sup>21</sup> These recommendations are given in publications of the ICRP notably publications 90 and 103 see the website at <http://www.icrp.org/>

<sup>22</sup> Council Directive 96/29/EURATOM laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation.

<sup>23</sup> HPA (2008) Guidance on the application of dose coefficients for the embryo, fetus and breastfed infant in dose assessments for members of the public. Doc HPA, RCE-5, 1-78, available at

<https://www.gov.uk/government/publications/embryo-fetus-and-breastfed-infant-application-of-dose-coefficients>

<sup>24</sup> The Environment Agency (EA), Scottish Environment Protection Agency (SEPA), Northern Ireland Environment Agency, Health Protection Agency and the Food Standards Agency (FSA).

Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment August 2012.

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/296390/geho1202bklh-e-e.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296390/geho1202bklh-e-e.pdf)

It is important that the methods used in any radiological dose assessment are clear and that key parameter values and assumptions are given (for example, the location of the representative persons, habit data and models used in the assessment).

Any radiological impact assessment, undertaken as part of the EIA, should also consider the possibility of short-term planned releases and the potential for accidental releases of radionuclides to the environment. This can be done by referring to compliance with the Ionising Radiation Regulations and other relevant legislation and guidance.

The radiological impact of any solid waste storage and disposal should also be addressed in the assessment to ensure that this complies with UK practice and legislation; information should be provided on the category of waste involved (e.g. very low level waste, VLLW). It is also important that the radiological impact associated with the decommissioning of the site is addressed.

Of relevance here is PHE advice on radiological criteria and assessments for land-based solid waste disposal facilities<sup>25</sup>. PHE advises that assessments of radiological impact during the operational phase should be performed in the same way as for any site authorised to discharge radioactive waste. PHE also advises that assessments of radiological impact during the post operational phase of the facility should consider long timescales (possibly in excess of 10,000 years) that are appropriate to the long-lived nature of the radionuclides in the waste, some of which may have half-lives of millions of years.

The radiological assessment should consider exposure of members of hypothetical representative groups for a number of scenarios including the expected migration of radionuclides from the facility, and inadvertent intrusion into the facility once institutional control has ceased.

For scenarios where the probability of occurrence can be estimated, both doses and health risks should be presented, where the health risk is the product of the probability that the scenario occurs, the dose if the scenario occurs and the health risk corresponding to unit dose.

For inadvertent intrusion, the dose if the intrusion occurs should be presented. It is recommended that the post-closure phase be considered as a series of timescales, with the approach changing from more quantitative to more qualitative as times further in the future are considered.

The level of detail and sophistication in the modelling should also reflect the level of hazard presented by the waste. The uncertainty due to the long timescales means that the concept of collective dose has very limited use, although estimates of collective dose from the 'expected' migration scenario can be used to compare the relatively early impacts from some disposal options if required.

## **Noise from National Networks and Airports**

Public Health England's mission is to protect and improve the nation's health and wellbeing and reduce health inequalities. Environmental noise can cause stress and disturb sleep, which over the long term can lead to a number of adverse health outcomes.<sup>26 27</sup>

The Noise Policy Statement for England (NPSE)<sup>28</sup> sets out the government's overall policy on noise. Its aims are to:

- avoid significant adverse impacts on health and quality of life;

---

<sup>25</sup> HPA RCE-8, Radiological Protection Objectives for the Land-based Disposal of Solid Radioactive Wastes, February 2009

<sup>26</sup> World Health Organisation, *Environmental Noise Guidelines for the European Region*. 2018.

<sup>27</sup> Lercher, P., G. Aasvang, and Y.e. de Kluizenaar, *WHO Noise and Health Evidence Reviews*.

<sup>28</sup> DEFRA, *Noise Policy Statement for England*. 2010.

- mitigate and minimise adverse impacts on health and quality of life; and
- contribute to the improvement of health and quality of life.

These aims should be applied within a broader context of sustainable development, where noise is considered alongside other economic, social and environmental factors. PHE expects such factors may include <sup>29</sup>:

- Ensuring healthy lives and promoting well-being for all at all ages;
- promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
- building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation;
- reducing inequality; and
- making cities and human settlements inclusive, safe, resilient and sustainable.

PHE's consideration of the effects of health and quality and life attributable to noise is guided by the recommendations in the 2018 Environmental Noise Guidelines for the European Region <sup>27</sup> published by the World Health Organization, and informed by high quality systematic reviews of the scientific evidence <sup>28 30 31</sup> The scientific evidence on noise and health is rapidly developing, and PHE's recommendations are also informed by relevant studies that are judged to be scientifically robust and consistent with the overall body of evidence.

In line with its mission, PHE believes that Nationally Significant Infrastructure Projects (NSIP) should not only limit significant adverse effects, but also explore opportunities to improve the health and quality of life of local communities and reduce inequalities.

PHE also recognises the developing body of evidence showing that areas of tranquillity offer opportunities for health benefits through psychological restoration. NSIP applications need to demonstrate that they have given due consideration to the protection of the existing sound environment in these areas.

Further, more detailed, guidance on PHE's scoping advice for noise issues associated with road schemes is included in Appendix 3.

## Wider Determinants of Health

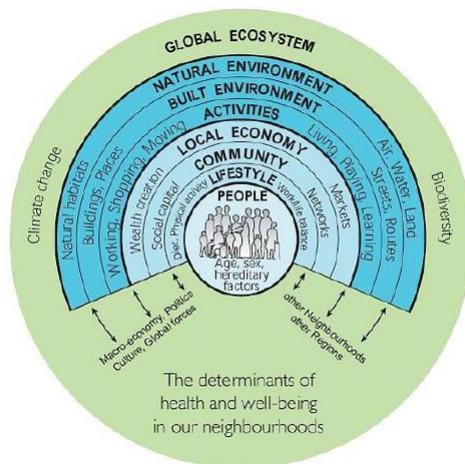
The World Health Organization (WHO's) defines health as "a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity" (WHO, 1948).

The health and wellbeing of an individual or a population is the result of a complex interaction of a wide range of different determinants of health, from an individual's genetic make-up, to lifestyles and behaviours, and the communities, local economy, built and natural environments to global ecosystem trends. All developments will have some effect on the determinants of health, which in turn will influence the health and wellbeing of the general population, vulnerable groups and individual people.

<sup>29</sup> United Nations. *Sustainable Development Goals*. 2020 [01/06/2020]; Available from: <https://sustainabledevelopment.un.org/?menu=1300>.

<sup>30</sup> Clark, C., C. Crumpler, and A.H. Notley, *Evidence for Environmental Noise Effects on Health for the United Kingdom Policy Context: A Systematic Review of the Effects of Environmental Noise on Mental Health, Wellbeing, Quality of Life, Cancer, Dementia, Birth, Reproductive Outcomes, and Cognition*. Int J Environ Res Public Health, 2020. **17**(2).

<sup>31</sup> van Kamp, I., et al., *Evidence Relating to Environmental Noise Exposure and Annoyance, Sleep Disturbance, Cardio-Vascular and Metabolic Health Outcomes in the Context of IGCB (N): A Scoping Review of New Evidence*. Int J Environ Res Public Health, 2020. **17**(9).



Barton and Grant<sup>32</sup>

PHE recognises that evaluating an NSIP’s impacts on health through the wider determinants is more complex than assessing a project’s direct impacts against clearly defined regulatory protections. The 2017 EIA Regulations clarify that the likely significant effects of a development proposal on population and human health must be assessed.

PHE’s expectations are that the proponent of an NSIP will conduct a proportionate and evidence-based assessment of the anticipated direct and indirect effects on health and wellbeing in line with the relevant regulatory and policy requirements. Consideration should be given to impacts during the construction, operation and decommissioning phase of NSIPs. Consideration should be given to the avoidance or mitigation of any negative impacts, as well as to how the NSIP could be designed to maximise potential positive benefits.

We accept that the relevance of wider determinants and associated impacts will vary depending on the nature of the proposed development. PHE has focused its approach on scoping determinants of health and wellbeing under four themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements.

The four themes are:

- Access
- Traffic and Transport
- Socioeconomic
- Land Use

PHE has developed a list of 21 determinants of health and wellbeing under these four broad themes. These determinants should be considered within any scoping report and if the applicant proposes to scope any areas out of the assessment, they should provide clear evidence-based reasoning and justification. Appendix 2 provides greater detail on the nature of each determinant.

## Methodology

PHE will expect assessments to set out the methodology used to assess impacts on each determinant included in the scope of the assessment. In some instances, the methodologies described may be established and refer to existing standards and/or guidance. In other instances, there may be no pre-defined methodology, which can often be the case for the wider determinants of health; as such there should be an application of a logical evidence based impact assessment method that:

- identifies the temporal and geographic scope of assessment

<sup>32</sup> Barton H, Grant M. A health map for the local human habitat. The Journal of the Royal Society for the Promotion of Health 2006; 126(6): 252-3.

- identifies affected sensitive receptors (general population and vulnerable populations) to impacts from the relevant determinant
- establishes the current baseline situation
- identifies the NSIP's potential direct and indirect impacts on each population
- if impacts are identified, evaluates whether the potential effect is likely to be significant in relation to the affected population
- identifies appropriate mitigation to eliminate or minimise impacts or the subsequent effects on health and inequalities
- identifies opportunities to achieve benefits from the scheme for health and inequalities
- considers any in combination or cumulative effects
- identifies appropriate monitoring programmes

Currently there is no standard methodology for assessing the population and human health effects of infrastructure projects, but a number of guides exist, including:

- Institute of Environmental Management and Assessment, 2017: Health in Environmental Assessment, a primer for a proportionate approach;<sup>33</sup>
- NHS London Healthy Urban Development Unit (HUDU), 2015. Healthy Urban Planning Checklist and Rapid Health Impact Assessment Tool;<sup>34</sup>
- Wales Health Impact Assessment Unit, 2012: HIA a practical guide;<sup>35</sup>
- National Mental Wellbeing Impact Assessment Development Unit 2011: Mental Wellbeing Impact Assessment Toolkit;<sup>36</sup>

PHE expects assessments to follow best practice from these guides and from methodologies adopted within other successful health/environmental impacts assessments.

### **Determining significant effects**

Neither the EIA regulations nor the National Policy Statements provide a definition of what constitutes a 'significant' effect, and so PHE have derived a list of factors which it will take into consideration in the assessment of significance of effects, as outlined below. These list of factors should be read in conjunction with guidance from the above guides.

#### **1. Sensitivity:**

Is the population exposed to the NSIP at particular risk from effects on this determinant due to pre-existing vulnerabilities or inequalities (for example, are there high numbers in the local population of people who are young, older, with disabilities or long-term conditions, or on a low income)? Will the NSIP widen existing inequalities or introduce new inequalities in relation to this determinant?

#### **2. Magnitude:**

How likely is the impact on this determinant to occur? If likely, will the impact affect a large number of people / Will the impact affect a large geographic extent? Will the effects be frequent or continuous? Will the effects be temporary or permanent and irreversible?

#### **3. Cumulative effects:**

---

33

[https://www.researchgate.net/publication/316968065\\_Health\\_in\\_Environmental\\_Impact\\_Assessment\\_a\\_primer\\_for\\_a\\_proportionate\\_approach](https://www.researchgate.net/publication/316968065_Health_in_Environmental_Impact_Assessment_a_primer_for_a_proportionate_approach)

<sup>34</sup> <https://www.healthyrbandevelopment.nhs.uk/our-services/delivering-healthy-urban-development/health-impact-assessment/>

<sup>35</sup> [https://whiasu.publichealthnetwork.cymru/files/1415/0710/5107/HIA\\_Tool\\_Kit\\_V2\\_WEB.pdf](https://whiasu.publichealthnetwork.cymru/files/1415/0710/5107/HIA_Tool_Kit_V2_WEB.pdf)

<sup>36</sup> <https://q.health.org.uk/document/mental-wellbeing-impact-assessment-a-toolkit-for-wellbeing/>

Will the NSIP's impacts on this determinant combine with effects from other existing or proposed NSIPs or large-scale developments in the area, resulting in an overall cumulative effect different to that of the project alone?

What are the cumulative effects of the impacts of the scheme on communities or populations. Individual impacts individually may not be significant but in combination may produce an overall significant effect.

**4. Importance:**

Is there evidence for the NSIP's effect on this determinant on health? Is the impact on this determinant important in the context of national, regional or local policy?

**5. Acceptability:**

What is the local community's level of acceptance of the NSIP in relation to this determinant? Do the local community have confidence that the applicants will promote positive health impacts and mitigate against negative health effects?

**6. Opportunity for mitigation:**

If this determinant is included in the scope for the EIA is there an opportunity to enhance any positive health impacts and/or mitigate any negative health impacts?

## **Vulnerable groups**

Certain parts of the population may experience disproportionate negative health effects as a result of a development. Vulnerable populations can be identified through research literature, local population health data or from the identification of pre-existing health conditions that increase vulnerability.

The effects on health and wellbeing and health inequalities of the scheme will have particular effect on vulnerable or disadvantaged populations, including those that fall within the list of protected characteristics. Some protected groups are more likely to have elevated vulnerability associated with social and economic disadvantages. Consideration should be given to language or lifestyles that influence how certain populations are affected by impacts of the proposal, for example non-English speakers may face barriers to accessing information about the works or expressing their concerns.

Equality Impact Assessments (EqIA) are used to identify disproportionate effects on Protected Groups (defined by the Equality Act, 2010), including health effects. The assessments and findings of the Environmental Statement and the EqIA should be cross referenced between the two documents, particularly to ensure the assessment of potential impacts for health and inequalities and that resulting mitigation measures are mutually supportive.

The Wales Health Impact Assessment Support Unit (WHIASU), provides a suggested guide to vulnerable groups

*Age related groups*

- Children and young people
- Older people

*Income related groups*

- People on low income
- Economically inactive
- Unemployed/workless
- People who are unable to work due to ill health

*Groups who suffer discrimination or other social disadvantage*

- People with physical or learning disabilities/difficulties

- Refugee groups
- People seeking asylum
- Travellers
- Single parent families
- Lesbian, gay or transgender people
- Black and minority ethnic groups
- Religious groups

#### *Geographical groups*

- People living in areas known to exhibit poor economic and/or health indicators
- People living in isolated/over-populated areas
- People unable to access services and facilities

### **Mental health**

PHE supports the use of the broad definition of health proposed by the World Health Organisation (WHO). Mental well-being is fundamental to achieving a healthy, resilient and thriving population. It underpins healthy lifestyles, physical health, educational attainment, employment and productivity, relationships, community safety and cohesion and quality of life. NSIP schemes can be of such scale and nature that they will impact on the over-arching protective factors, which are:

- Enhancing control
- Increasing resilience and community assets
- Facilitating participation and promoting inclusion.

There should be parity between mental and physical health, and any assessment of health impact should include the appreciation of both. A systematic approach to the assessment of the impacts on mental health, including suicide, is required. The Mental Well-being Impact Assessment (MWIA) could be used as a methodology. The assessment should identify vulnerable populations and provide clear mitigation strategies that are adequately linked to any local services or assets

Perceptions about the proposed scheme may increase the risk of anxiety or health effects by perceived effects. “Estimation of community anxiety and stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard.

### **Evidence base and baseline data**

Baseline population / community health data (quantitative and qualitative) should be sufficient to represent current health status and identify areas or groups with poor health or inequalities. This should provide sufficient information on the physical and mental health and wellbeing and social determinants of health for the affected populations and any vulnerable groups identified.

A baseline health assessment could include:

- General population data (including size, density, age, gender, income and employment, socio-economic status, crime and disorder etc, health status.)
- Environmental information (housing, transport, access to services, provision and access to green space, tranquillity or sound environment)
- Data on behaviour, such as levels of physical activity, smoking, car usage, walking and cycling
- Surveys of local conditions
- Local concerns and anxieties (where documented)
- Secondary analysis of existing local data
- Resident surveys or consultations
- Health status, particularly of the population groups already identified as vulnerable and likely to benefit or be harmed by the proposal. This should include mental health and suicide.
- Quality of life indicators (if available / relevant)

- Local people's views of the area and of the services provided (community engagement exercises)

There will be a range of publicly available health data including:

- National datasets such as those from the Office of National Statistics,
- PHE, including the fingertips data sets,
- Non-governmental organisations,
- Local public health reports, such as the Joint Strategic Needs Assessment and Health and Wellbeing Strategies;
- Consultation with local authorities, including public health teams
- Information received through public consultations, including community engagement exercises

There should be a narrative which interprets the data collected in the context of the project. A list of tables and data is not sufficient, so the report should consider:

- Are particular groups or vulnerable groups likely to be impacted more than others and is this clearly described and explained?
- What indicators within the current health baseline that are worse than England average/ local ward or LSOA levels?
- What are the levels of inequality in the study area?  
What are the potential inequalities in the distribution of impacts?

### **Mitigation**

If the assessment has identified that significant negative effects are likely to occur with respect to the wider determinants of health, the assessment should include a description of planned mitigation measures the applicant will implement to avoid or prevent effects on the population.

Mitigation and/or monitoring proposals should be logical, feasible and have a clear governance and accountability framework indicating who will be responsible for implementation and how this will be secured during the construction and/or operation of the NSIP.

Any proposed mitigation should have sufficient detail to allow for an assessment of the adequacy of the proposed mitigation measures.

### **Positive benefits from the scheme**

The scale of many NSIP developments will generate the potential for positive impacts on health and wellbeing; however, delivering such positive health outcomes often requires specific enabling or enhancement measures. For example, the construction of a new road network to access an NSIP site may provide an opportunity to improve the active transport infrastructure for the local community. PHE expects developments to consider and report on the opportunity and feasibility of positive impacts. These may be stand alone or be considered as part of the mitigation measures.

### **Replacement publicly accessible space or community assets**

The replacement of community assets provides opportunity for positive impacts and the design, location and operation of the replacement asset should be considered in consultation with user, the local community and agencies.

Any replacement recreational land, open space or other community assets should be located and designed to:

- Not unreasonably extend journey times or increase transport costs, or result in too many people being prevented from travelling sustainably due to unsuitable walking or cycling routes.

- Ensure that accessibility planning has been properly taken into account and that the proposal will not adversely impact on disadvantaged groups.
- Meet identified community needs which may go beyond direct replacement but can be reasonably incorporated
- Provide acceptable recreational amenity, including noise environment, for outdoor spaces associated with the individual community facilities
- The design of the sites should be carried out in consultation with the local community. It should incorporate features and designs to enable access and use across the life course.
- The PEIR should contain sufficient detail regarding the location and design in order to determine the acceptability of the replacement facilities.
- Quality, quantity and accessibility should be determined against defined criteria agreed with stakeholders. The following evidence based assessment tools should be considered:

The quality of the provision of replacement green space should be assessed, for example by the use of:

[Building with Nature](#) - There are 6 wellbeing standards, which are:

- Accessible
- Inclusive
- Seasonal enjoyment
- Locally relevant
- Socially sustainable
- Distinctive

The [ANGSt standards](#) address amount, access and quality

The [ORVaL tool](#) - This tool works on areas that are currently publicly accessible and looks at welfare values for this area. The site functionality allows users to investigate how altering the land cover, features or the area of existing recreation sites will change usage and welfare values. This allows a comparison between existing and the proposed sites. Contact should be made with the ORVaL team to establish the functionality of the tool relevant to the DCO and interpretation of the findings<sup>37</sup>.

[Green Flag Award](#)- a robust framework for assessing the quality of public green spaces of all types and sizes.

## Employment

NSIP schemes have the potential to negatively impact through the relocation or loss of local businesses. Equally they can offer an opportunity for new business activity and employment both at the construction stage and operation of the development approved by the DCO.

There is clear evidence that good work improves health and wellbeing across people's lives and protects against social exclusion. Conversely, unemployment is bad for health and wellbeing, as it is associated with an increased risk of mortality and morbidity. For many individuals, in particular those with long-term conditions such as mental health problems, musculoskeletal (MSK) conditions and disabilities, health issues can be a barrier to gaining and retaining employment. Employment rates are lowest among disabled people, with only 51.3% in work, meaning there is a substantial employment rate gap in the UK between disabled and non-disabled people (81.4% in employment). Among these working age disabled people in the UK, 54% have a mental health or MSK condition

---

<sup>37</sup> [https://www.leep.exeter.ac.uk/orval/pdf-reports/ORVal2\\_User\\_Guide.pdf](https://www.leep.exeter.ac.uk/orval/pdf-reports/ORVal2_User_Guide.pdf)

as their main health condition<sup>38</sup>. Enabling people with health issues to obtain or retain work, and be productive within the workplace, is a crucial part of the economic success and wellbeing of every community and industry.

It is important that people are supported to gain employment and maintain economic independence for themselves and their families, especially as they age. This is of particular importance for individuals with long-term conditions and disabilities, due to the barriers they face in gaining employment and retaining a job.

Where relevant any assessments should include:

- The impact of business relocation in order to identify the likely level of job losses within the study area
- The proposed support mechanisms to be established for business owners and employees
- A clear strategy and action plan that addresses barriers to employment within the local population and those that cease employment due to the DCO.

### **Compulsory purchase**

NSIP schemes can involve the compulsory acquisition of property from land take. Mitigation will involve supporting home-owners and tenants in understanding and utilising the compensation and support offered through the compensation policies.

The impacts from compulsory acquisition of land and property can affect health and wellbeing, including mental health, for example from home, school and employment relocation and loss of employment. This will be particularly relevant to sensitive receptors within communities, many of which will form part of the private rented sector.

Compensation and support can be an important element of mitigation, but developers should consider opportunities to work through partners and local Voluntary, Community and Social Enterprise (VCSE) organisations. These organisations offer the potential for engagement with vulnerable groups and may gain greater acceptance by the wider community.

Any compulsory purchase support schemes should ensure sufficient competency in public health, including public mental health, in order to help support local communities. The aim would be to establish a workforce that is confident, competent and committed to:

- promote good physical and mental health across the population
- prevent mental illness and suicide
- improve the quality and length of life of people living within affected communities

The Public mental health leadership and workforce development framework<sup>39</sup> published by PHE offers a skills framework for the wider public health workforce. As well as the competences in this framework. Health Education England (HEE) have published a course content guide entitled Public Mental Health Content Guide For introductory courses or professional development in mental health and wellbeing<sup>40</sup>.

### **Monitoring**

---

<sup>38</sup> [PHE \(Jan 2019\). Guidance - Health matters: health and work](https://publichealthmatters.blog.gov.uk/2019/01/31/health-matters-health-and-work/)  
(<https://publichealthmatters.blog.gov.uk/2019/01/31/health-matters-health-and-work/>)

<sup>39</sup> [Public mental health leadership and workforce development framework - Confidence, competence, commitment. PHE \(2015\)](#)

<sup>40</sup> [Public Mental Health Content Guide for introductory courses or professional development in mental health and wellbeing. Health education England](#)

PHE expects an assessment to include consideration of the need for monitoring and the ES should clearly state the principles on which the monitoring strategy has been established, including monitoring in response to unforeseen impacts or effects.

It may be appropriate to undertake monitoring where:

- Critical assumptions have been made in the absence of supporting evidence or data
- There is uncertainty about whether significant negative effects are likely to occur and it would be appropriate to include planned monitoring measures to track their presence, scale and nature.
- There is uncertainty about the potential success of mitigation measures
- It is necessary to track the nature of the impact or effect and provide useful and timely feedback that would allow action to be taken should negative effects occur

The monitoring strategy should set out:

- Monitoring methodologies
- Data sources, particularly if being obtained from third parties or open access data
- Assessment methods
- Publication methodology
- Reporting frequency
- Temporal and geographic scope

For very large controversial schemes it may be worth considering the need to have an independent organisation undertake / report on the monitoring and the need for academic robustness.

### **Community based reports**

Large complex schemes that involve significant effects on communities or significant cumulative effects can benefit from identifying impacts and reporting at an individual community level. This assists in the identification of the overall potential effects across a range of impacts. These community level reports will also aid local communities to engage with consultations by providing relevant and accessible information.

### **How to contact PHE**

If you wish to contact us regarding an existing or potential NSIP application please email: [nsipconsultations@phe.gov.uk](mailto:nsipconsultations@phe.gov.uk)

## Appendix 2

Table 1 – Wider determinants of health and wellbeing

Health and wellbeing themes			
Access	Traffic and Transport	Socioeconomic	Land Use
<b>Wider determinants of health and wellbeing</b>			
<p>Access to :</p> <ul style="list-style-type: none"> <li>• local public and key services and facilities.</li> <li>• Good quality affordable housing.</li> <li>• Healthy affordable food.</li> <li>• The natural environment.</li> <li>• The natural environment within the urban environment.</li> <li>• Leisure, recreation and physical activities within the urban and natural environments.</li> </ul>	<ul style="list-style-type: none"> <li>• Accessibility.</li> <li>• Access to/by public transport.</li> <li>• Opportunities for access by cycling and walking.</li> <li>• Links between communities.</li> <li>• Community severance.</li> <li>• Connections to jobs.</li> <li>• Connections to services, facilities and leisure opportunities.</li> </ul>	<ul style="list-style-type: none"> <li>• Employment opportunities, including training opportunities.</li> <li>• Local business activity.</li> <li>• Regeneration.</li> <li>• Tourism and leisure industries.</li> <li>• Community/social cohesions and access to social networks.</li> <li>• Community engagement.</li> </ul>	<ul style="list-style-type: none"> <li>• Land use in urban and/or /rural settings.</li> <li>• Quality of Urban and natural environments</li> </ul>

### 1) Access

- a. Access to local, public and key services and facilities  
 Access to local facilities can increase mobility and social participation. Body mass index is significantly associated with access to facilities, including factors such as the mix and density of facilities in the area. The distance to facilities has no or only a small effect on walking and other physical activities. Access to recreational facilities can increase physical activity, especially walking for recreation, reduce body weight, reduce the risk of high blood pressure, and reduce the number of vehicle trips, the distances travelled and greenhouse gas emissions.

Local services include health and social care, education, employment, and leisure and recreation. Local facilities include community centres, shops, banks/credit unions and Post Offices. Services and facilities can be operated by the public, private and/or voluntary sectors. Access to services and facilities is important to both physical and mental health and wellbeing. Access is affected by factors such as availability, proximity to people's place of residence, existence of transport services or active

travel infrastructure to the location of services and facilities, and the quality of services and facilities.

The construction or operation of an NSIP can affect access adversely: it may increase demand and therefore reduce availability for the existing community; during construction, physical accessibility may be reduced due to increased traffic and/or the blockage of or changes to certain travel routes. It is also possible that some local services and facilities are lost due to the land-take needed for the NSIP.

Conversely if new routes are built or new services or facilities provided the NSIP may increase access. NSIPs relating to utilities such as energy and water can maintain, secure or increase access to those utilities, and thereby support health and wellbeing.

b. Access to good-quality affordable housing

Housing refurbishment can lead to an improvement in general health and reduce health inequalities. Housing improvements may also benefit mental health. The provision of diverse forms and types of housing is associated with increased physical activity. The provision of affordable housing is strongly associated with improved safety perceptions in the neighbourhood, particularly among people from low-income groups. For vulnerable groups, the provision of affordable housing can lead to improvements in social, behavioural and health related outcomes. For some people with long term conditions, the provision of secure and affordable housing can increase engagement with healthcare services, which can lead to improved health-related outcomes. The provision of secure and affordable housing can also reduce engagement in risky health-related behaviours. For people who are homeless, the provision of affordable housing increases engagement with healthcare services, improves quality of life and increases employment, and contributes to improving mental health.

Access to housing meets a basic human need, although housing of itself is not necessarily sufficient to support health and wellbeing: it is also important that the housing is of good quality and affordable. Factors affecting the quality of housing include energy efficiency (eg effective heating, insulation), sanitation and hygiene (eg toilet and bathroom), indoor air quality including ventilation and the presence of damp and/or mould, resilience to climate change, and overcrowding. The affordability of housing is important because for many people, especially people on a low income, housing will be the largest monthly expense; if the cost of housing is high, people may not be able to meet other needs such as the need for heating in winter or food. Some proposals for NSIPs include the provision of housing, which could be beneficial for the health and wellbeing of the local population. It is also possible that some housing will be subject to a compulsory purchase order due to the land-take needed for an NSIP.

c. Access to affordable healthy food

Access to healthy food is related to the provision of public and active transport infrastructure and the location and proximity of outlets selling healthier food such as fruit and vegetables. For the general population, increased access to healthy, affordable food through a variety of outlets (shops, supermarkets, farmers' markets and community gardens) is associated with improved dietary behaviours, including attitudes towards healthy eating and food purchasing behaviour, and improved adult weight. Increased access to unhealthier food retail outlets is associated with increased weight in the general population and increased obesity and unhealthy eating behaviours among children living in low-income areas. Urban agriculture can improve attitudes towards healthier food and increase fruit and vegetable consumption.

Factors affecting access to healthy affordable food include whether it is readily available from local shops, supermarkets, markets or delivery schemes and/or there are opportunities to grow food in local allotments or community gardens. People in environments where there is a high proportion of fast food outlets may not have easy access to healthy affordable food.

d. Access to the natural environment

Availability of and access to safe open green space is associated with increased physical activity across a variety of behaviours, social connectedness, childhood development, reduced risk of overweight and obesity and improved physical and mental health outcomes. While the quantity of green space in a neighbourhood helps to promote physical activity and is beneficial to physical health, eg lower rates of mortality from cardiovascular disease and respiratory disease in men, the availability of green environments is likely to contribute more to mental health than to physical health: the prevalence of some disease clusters, particularly anxiety and depression, is lower in living environments which have more green space within a 1-km radius.

The proximity, size, type, quality, distribution, density and context of green space are also important factors. Quality of green space may be a better predictor of health than quantity, and any type of green space in a neighbourhood does not necessarily act as a venue for, or will encourage, physical activity. 'Walkable' green environments are important for better health, and streetscape greenery is as strongly related to self-reported health as green areas. Residents in deprived areas are more likely to perceive access to green space as difficult, to report poorer safety, to visit the green space less frequently and to have lower levels of physical activity. The benefits to health and wellbeing of blue space include lower psychological distress.

The natural environment includes the landscape, waterscape and seascape. Factors affecting access include the proximity of the natural environment to people's place of residence, the existence of public transport services or active travel infrastructure to the natural environment, the quality of the natural environment and feelings of safety in the natural environment. The construction of an NSIP may be an opportunity to provide green and/or blue infrastructure in the local area. It is also possible that green or blue infrastructure will be lost due to the land-take needed for the NSIP.

e. Access to the natural environment within the urban environment

Public open spaces are key elements of the built environment. Ecosystem services through the provision of green infrastructure are as important as other types of urban infrastructure. It supports physical, psychological and social health, although the quality, perceptions of safety and accessibility of green space affects its use. Safe parks may be particularly important for promoting physical activity among urban adolescents. Proximity to urban green space and an increased proportion of green space are associated with decreased treatment of anxiety/mood disorders, the benefits deriving from both participation in usable green space near to home and observable green space in the neighbourhood. Urban agriculture may increase opportunities for physical activity and social connections.

A view of 'greenery' or of the sea moderates the annoyance response to noise. Water is associated with positive perceptive experiences in urban environments, with benefits for health such as enhanced contemplation, emotional bonding, participation and physical activity. Increasing biodiversity in urban environments, however, may promote the introduction of vector or host organisms for infectious pathogens, eg green connectivity may potentiate the role of rats and ticks in the spread of disease,

and bodies of water may provide habitats for mosquitoes.

The natural environment within the urban environment includes the provision of green and blue space in towns and cities. Factors involved in access include the proximity of the green and/or blue space to people's place of residence, the existence of transport services or active travel infrastructure to the green and/or blue space, the quality of the green and/or blue space and feelings of safety when using the green and/or blue space. The construction of an NSIP may be an opportunity to provide green and/or blue infrastructure in the local urban environment. It is also possible that green or blue infrastructure in the urban environment will be lost due to the land-take needed for the NSIP.

- f. Access to leisure, recreation and physical activity opportunities within the urban and natural environments.

Access to recreational opportunities, facilities and services is associated with risk factors for long-term disease; it can increase physical activity, especially walking for recreation, reduce body mass index and overweight and obesity, reduce the risk of high blood pressure, and reduce the number of vehicle trips, the distances travelled and greenhouse gas emissions. It can also enhance social connectedness. Children tend to play on light-traffic streets, whereas outdoor activities are less common on high-traffic streets. A perception of air pollution can be a barrier to participating in outdoor physical activity<sup>41</sup>. However, the health co-benefits from physical activity outweigh the adverse effects of air pollution. There is a positive association between urban agriculture and increased opportunities for physical activity and social connectivity. Gardening in an allotment setting can result in many positive physical and mental health-related outcomes. Exercising in the natural environment can have a positive effect on mental wellbeing when compared with exercising indoors.

Leisure and recreation opportunities include opportunities that are both formal, such as belonging to a sports club, and informal, such as walking in the local park or wood. Physical activity opportunities include routine activity as part of daily life, such as walking or cycling to work, and activity as part of leisure or recreation, such as playing football. The construction of an NSIP may enhance the opportunities available for leisure and recreation and physical activity through the provision of new or improved travel routes, community infrastructure and/or green or blue space. Conversely, construction may reduce access through the disruption of travel routes to leisure, recreation and physical activity opportunities.

## 2) **Traffic and Transport**

- a. Accessibility

Walkability, regional accessibility, pavements and bike facilities are positively associated with physical activity and negatively related to body weight and high blood pressure, and reduce the number of vehicle trips, the distances travelled and greenhouse gas emissions. Body mass index is associated with street network accessibility and slope variability.

Accessibility in relation to transport and travel has several aspects including whether potential users can gain physical access to the infrastructure and access to the

---

<sup>41</sup> Annear, M., Keeling, S., Wilkinson, T., Cushman, G., Gidlow, B., & Hopkins, H. (2014). Environmental influences on healthy and active ageing: A systematic review. *Ageing & Society*, 34 (4), 590-622. Available at [https://www.academia.edu/34314864/Environmental\\_influences\\_on\\_healthy\\_and\\_active\\_ageing\\_a\\_systematic\\_review](https://www.academia.edu/34314864/Environmental_influences_on_healthy_and_active_ageing_a_systematic_review)

services the infrastructure provides. The design and operation of transport infrastructure and the associated services should take account of the travel needs of all potential users including people with limited mobility. People whose specific needs should be considered include pregnant women, older people, children and young people and people with a disability. Other aspects of transport infrastructure affecting accessibility include safety and affordability, both of which will affect people's ability to travel to places of employment and/or key local services and facilities and/or access their social networks.

b. Access to / by public transport

Provision of high-quality public transport is associated with higher levels of active travel among children and among people commuting to work, with a decrease in the use of private cars. Combining public transport with other forms of active travel can improve cardiovascular fitness. Innovative or new public transport interventions may need to be marketed and promoted differently to different groups of transport users, eg by emphasising novelty to car users while ensuring that the new system is seen by existing users as coherently integrated with existing services.

Transport facilitates access to other services, facilities and amenities important to health and wellbeing. Public transport is any transport open to members of the public including bus, rail and taxi services operated by the public, private or community sectors. For people who do not have access to private transport, access to public transport is important as the main agency of travel especially for journeys >1 mile. Access to public transport is not sufficient, however, and access by public transport needs to be taken into account: public transport services should link places where people live with the destinations they need or want to visit such as places of employment, education and healthcare, shops, banks and leisure facilities. Other aspects of access to public transport include affordability, safety, frequency and reliability of services.

c. Opportunities for / access by cycling & walking

Walking and cycling infrastructure can enhance street connectivity, helping to reduce perceptions of long-distance trips and providing alternative routes for active travel. Awareness of air pollution could be a barrier to participating in active travel, however those that choose to walk or cycle often experience lower exposure to pollution, and create less pollution than those in vehicles<sup>42</sup>. Prioritising pedestrians and cyclists through changes in physical infrastructure can have positive behavioural and health outcomes, such as physical activity, mobility and cardiovascular outcomes. The provision and proximity of active transport infrastructure is also related to other long-term disease risk factors, such as access to healthy food, social connectedness and air quality.

Perceived or objective danger may also have an adverse effect on cycling and walking, both of which activities decrease with increasing traffic volume and speed, and cycling for leisure decreases as local traffic density increases. Health gains from active travel policies outweigh the adverse effects of road traffic incidents. New infrastructure to promote cycling, walking and the use of public transport can increase the time spent cycling on the commute to work, and the overall time spent commuting among the least-active people. Active travel to work or school can be associated with body mass index and weight, and may reduce cardiovascular risk factors and improve cardiovascular outcomes. The distance of services from cycle paths can have an adverse effect on cycling behaviour, whereas mixed land use, higher densities and

---

<sup>42</sup> Defra 2019, Clean Air Strategy 2019. Available at <https://www.gov.uk/government/publications/clean-air-strategy-2019>

reduced distances to non-residential destinations promote transportation walking.

- d. **Links between communities**  
Social connectedness can be enhanced by the provision of public and active transport infrastructure and the location of employment, amenities, facilities and services.
- e. **Community severance**  
In neighbourhoods with high volumes of traffic, the likelihood of people knowing and trusting neighbours is reduced.
- f. **Connections to jobs**  
The location of employment opportunities and the provision of public and active transportation infrastructure are associated with risk factors for long-term disease such as physical activity. Good pedestrian and cycling infrastructure can promote commuting physical activity. Improved transport infrastructure has the potential to shift the population distribution of physical activity in relation to commuting, although a prerequisite may be a supportive social environment. Mixed land use, higher densities and reduced distances to non-residential destinations promote transportation walking.

The ease of access to employment, shops and services including the provision of public and active transport are important considerations and schemes should take any opportunity to improve infrastructure to promote cycling, walking and the use of public transport

- g. **Connections to services, facilities and leisure opportunities**  
Mixed land use, higher densities and reduced distances to non-residential destinations promote transportation walking. Access to recreational opportunities and the location of shops and services are associated with risk factors for long-term disease such as physical activity, access to healthy food and social connectedness. Increased distance of services from cycle paths can have an adverse effect on cycling behaviour.

### 3) **Socio Economic**

- a. **Employment opportunities including training opportunities**  
Employment is generally good for physical and mental health and well-being, and worklessness is associated with poorer physical and mental health and well-being. Work can be therapeutic and can reverse the adverse health effects of unemployment for healthy people of working age, many disabled people, most people with common health problems and social security beneficiaries. Account must be taken of the nature and quality of work and its social context and jobs should be safe and accommodating. Overall, the beneficial effects of work outweigh the risks of work and are greater than the harmful effects of long-term unemployment or prolonged sickness absence. Employment has a protective effect on depression and general mental health.

Transitions from unemployment to paid employment can reduce the risk of distress and improve mental health, whereas transitions into unemployment are psychologically distressing and detrimental to mental health. The mental health benefits of becoming employed are also dependent on the psychosocial quality of the job, including level of control, demands, complexity, job insecurity and level of pay: transition from unemployment to a high-quality job is good for mental health, whereas transition from unemployment to a low-quality job is worse for mental health than being unemployed. For people receiving social benefits, entry into paid employment

can improve quality of life and self-rated health (physical, mental, social) within a short time-frame. For people receiving disability benefits, transition into employment can improve mental and physical health. For people with mental health needs, entry into employment reduces the use of mental health services.

For vocational rehabilitation of people with severe mental illness (SMI), Supported Employment is more effective than Pre-vocational Training in helping clients obtain competitive employment; moreover, clients in Supported Employment earn more and work more hours per month than those in Pre-vocational Training.

b. Local Business Activity

It is important to demonstrate how a proposed development will contribute to ensuring the vitality of town centres. Schemes should consider the impact on local employment, promote beneficial competition within and between town centres, and create attractive, diverse places where people want to live, visit and work

In rural areas the applicant should assess the impact of the proposals on a prosperous rural economy, demonstrate how they will support the sustainable growth and expansion of all types of business and enterprise in rural areas, promoting the development and diversification of agricultural and other land based rural businesses.

c. Regeneration

Following rebuilding and housing improvements in deprived neighbourhoods, better housing conditions are associated with better health behaviours; allowing people to remain in their neighbourhood during demolition and rebuilding is more likely to stimulate life-changing improvements in health behaviour than in people who are relocated. The partial demolition of neighbourhoods does not appear to affect residents' physical or mental health. Mega-events, such as the Olympic Games, often promoted on the basis of their potential legacy for regeneration, appear to have only a short-term impact on mental health.

d. Tourism and Leisure Industries

The applicant should assess the impact of the proposed development on retail, leisure, commercial, office, tourism, cultural, community and residential development needed in town centres. In rural locations assessment and evaluation of potential impacts on sustainable rural tourism and leisure developments that benefit businesses in rural areas, communities and visitors should be undertaken.

e. Community / social cohesion and access to social networks

The location of employment, shops and services, provision of public and active transport infrastructure and access to open space and recreational opportunities are associated with social connectedness. Access to local amenities can increase social participation. Neighbourhoods that are more walkable can increase social capital. Urban agriculture can increase opportunities for social connectivity. Infrastructure developments, however, can affect the quality of life of communities living in the vicinity, mediated by substantial community change, including feelings of threat and anxiety, which can lead to psychosocial stress and intra-community conflict.

f. Community engagement

Public participation can improve environmental impact assessments, thereby increasing the total welfare of different interest groups in the community. Infrastructure development may be more acceptable to communities if it involves substantial public participation.

#### 4) Land Use

##### a. Land use in urban and / or rural settings

Land-use mix including infrastructure:

Land use affects health not only by shaping the built environment, but also through the balance of various types of infrastructure including transport. Vulnerable groups in the population are disproportionately affected by decisions about land use, transport and the built environment. Land use and transport policies can result in negative health impacts due to low physical activity levels, sedentary behaviours, road traffic incidents, social isolation, air pollution, noise and heat. Mixed land use can increase both active travel and physical activity. Transportation walking is related to land-use mix, density and distance to non-residential destinations; recreational walking is related to density and mixed use. Using modelling, if land-use density and diversity are increased, there is a shift from motorised transport to cycling, walking and the use of public transport with consequent health gain from a reduction in long-term conditions including diabetes, cardiovascular disease and respiratory disease.

##### b. Quality of urban and natural environments

Long-term conditions such as cardiovascular disease, diabetes, obesity, asthma and depression can be moderated by the built environment. People in neighbourhoods characterised by high 'walkability' walk more than people in neighbourhoods with low 'walkability' irrespective of the land-use mix. In neighbourhoods associated with high 'walkability' there is an increase in physical activity and social capital, a reduction in overweight and blood pressure, and fewer reports of depression and of alcohol abuse. The presence of walkable land uses, rather than their equal mixture, relates to a healthy weight. Transportation walking is at its highest levels in neighbourhoods where the land-use mix includes residential, retail, office, health, welfare and community, and entertainment, culture and recreation land uses; recreational walking is at its highest levels when the land-use mix includes public open space, sporting infrastructure and primary and rural land uses. Reduced levels of pollution and street connectivity increase participation in physical activity.

Good-quality street lighting and traffic calming can increase pedestrian activity, while traffic calming reduces the risk of pedestrian injury. 20-mph zones and limits are effective at reducing the incidence of road traffic incidents and injuries, while good-quality street lighting may prevent them. Public open spaces within neighbourhoods encourage physical activity, although the physical activity is dependent on different aspects of open space, such as proximity, size and quality. Improving the quality of urban green spaces and parks can increase visitation and physical activity levels.

Living in a neighbourhood overlooking public areas can improve mental health, and residential greenness can reduce the risk of cardiovascular mortality. Crime and safety issues in a neighbourhood affect both health status and mental health. Despite the complexity of the relationship, the presence of green space has a positive effect on crime, and general environmental improvements may reduce the fear of crime. Trees can have a cooling effect on the environment – an urban park is cooler than a non-green site. Linking road infrastructure planning and green infrastructure planning can produce improved outcomes for both, including meeting local communities' landscape sustainability objectives.

## **Appendix 3**

### **NSIP National Networks – Road schemes (scoping stage)**

#### **Public Health England Generic Response: Noise and Public Health**

##### **Guiding principles**

Public Health England's mission is to protect and improve the nation's health and wellbeing and reduce health inequalities. Environmental noise can cause stress and disturb sleep, which over the long term can lead to a number of adverse health outcomes [1, 2].

The Noise Policy Statement for England (NPSE) [3] sets out the government's overall policy on noise. Its aims are to:

- avoid significant adverse impacts on health and quality of life;
- mitigate and minimise adverse impacts on health and quality of life; and
- contribute to the improvement of health and quality of life.

These aims should be applied within a broader context of sustainable development, where noise is considered alongside other economic, social and environmental factors. PHE expects such factors may include [4]:

- Ensuring healthy lives and promoting well-being for all at all ages;
- promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all;
- building resilient infrastructure, promoting inclusive and sustainable industrialisation and fostering innovation;
- reducing inequality; and
- making cities and human settlements inclusive, safe, resilient and sustainable.

PHE's consideration of the effects of health and quality and life attributable to noise is guided by the recommendations in the 2018 Environmental Noise Guidelines for the European Region [1] published by the World Health Organization, and informed by high quality systematic reviews of the scientific evidence [2, 5, 6]. The scientific evidence on noise and health is rapidly developing, and PHE's recommendations are also informed by relevant studies that are judged to be scientifically robust and consistent with the overall body of evidence.

In line with its mission, PHE believes that Nationally Significant Infrastructure Projects (NSIP) should not only limit significant adverse effects, but also explore opportunities to improve the health and quality of life of local communities and reduce inequalities.

PHE also recognises the developing body of evidence showing that areas of tranquillity offer opportunities for health benefits through psychological restoration. NSIP applications need to demonstrate that they have given due consideration to the protection of the existing sound environment in these areas.

##### **Significance of Impacts**

Determining significance of impacts is an essential element of an Environmental Impact Assessment, and therefore significance needs to be clearly defined at the earliest opportunity by the Applicant. PHE recommends that the definition of significance is discussed and agreed with relevant stakeholders, including local authority environmental health and public health teams and local community representatives, through a documented consultation process. PHE recommends that any disagreement amongst stakeholders on the methodology for defining significance is acknowledged in the planning application documentation and could inform additional sensitivity analyses.

For noise exposure, PHE expects assessments of significance to be closely linked to the associated impacts on health and quality of life, and not on noise exposure per se (in line with the NPSE). The

latest revision of the Design Manual for Roads and Bridges (DMRB) Table 3.49 LA111 [7] includes proposed values for the Lowest Observable Adverse Effect Level (LOAEL) and Significant Observable Adverse Effect Level (SOAEL)<sup>43</sup> for operational noise, and these values are likely to inform judgements on significance of impact. Whilst DMRB does not explicitly reference the underpinning evidence that informed these numbers, the night time LOAEL and SOAEL of 40 dB  $L_{\text{night}}$  (outside, free-field) and 55 dB  $L_{\text{night}}$  (outside, free-field) respectively, correspond to the guideline value and interim target proposed in the WHO Night Noise Guidelines (2009) [8]. The Night Noise Guidelines emphasized that the interim target was “not a health-based limit value by itself. Vulnerable groups cannot be protected at this level”.

The daytime SOAEL of 68 dB  $L_{A10,18\text{hr}}$  (façade) appears to be derived from the relative noise level in the Noise Insulation Regulations (NIR) [9], which is linked to the provision of enhanced noise insulation for new highway infrastructure. The NIR does not explicitly refer to the underpinning evidence on which the relevant noise level is based, and there is a lack of good quality evidence linking noise exposure expressed in the  $L_{A10}$  metric to health effects. Therefore, it is helpful to convert these levels to  $L_{\text{den}}$  and  $L_{\text{Aeq},16\text{hr}}$  metrics, which are more widely used in the noise and health literature. Assuming motorway traffic, a level of 68 dB  $L_{A10,18\text{hr}}$  (façade) is approximately equivalent to<sup>44</sup> free-field outdoor levels of 69dB  $L_{\text{den}}$  (or<sup>45</sup> 64 $L_{\text{Aeq},16\text{hr}}$ ). The corresponding internal noise levels are<sup>46</sup> approximately 54dB  $L_{\text{Aeq},16\text{hr}}$  (open windows), 48dB  $L_{\text{Aeq},16\text{hr}}$  (tilted windows) and 36dB  $L_{\text{Aeq},16\text{hr}}$  (closed windows).

For construction noise the latest revision of the DMRB makes reference to Section E3.2 and Table E.1 in Annex E (informative) of BS 5228-1:2009+A1:2014 [10] for the definition of SOAELs. Table E.1 of BS 5228-1:2009+A1:2014 provides examples of threshold values in three categories, based on existing ambient values. Threshold values are higher when ambient noise levels are higher. Daytime (07:00-19:00, weekdays) thresholds can be traced back to principles promoted by the Wilson Committee in 1963 [11]: “Noise from construction and demolition sites should not exceed the level at which conversation in the nearest building would be difficult with the windows shut.” The Wilson committee also recommended that “Noisy work likely to cause annoyance locally should not be permitted between 22.00 hours and 07.00 hours.” BS 5228 states that these principles have been expanded over time to include a suite of noise levels covering the whole day/week period taking into account the varying sensitivities through these periods.

With reference to the noise exposure hierarchy table in the Planning Practice Guidance (Noise) [14], PHE is not aware of good quality scientific evidence that links specific noise levels to behavioural/attitudinal changes in the general population. Reactions to noise at an individual level are strongly confounded by personal, situational and environmental non-acoustic factors [16, 17], and large inter-personal variations are observed in the reaction of a population to a particular noise level [18-21]. For these reasons PHE is not able to provide evidence-based general recommendations for SOAELs that are able to achieve the aims and objectives of the Noise Policy Statement for England and the Planning Practice Guidance on noise. DMRB allows for project specific LOAELs and SOAELs to be defined if necessary, and PHE recommends that for each scheme the Applicant gives careful consideration of the following:

- i. The existing noise exposure of affected communities – in particular, consideration of any designated Noise Important Areas identified in proximity to the scheme;

---

<sup>43</sup> As defined in the Noise Policy Statement for England [3] and the Planning Practice Guidance [14].

<sup>44</sup> Using equation 4.16 from [22], assuming free-field levels;  $L_{A10,18\text{hr}}$  (free-field) =  $L_{A10,18\text{hr}}$  (façade) – 2.5dB(A) as per CRTN [13].

<sup>45</sup> Using conversion factors in para. 2.2.13 Transport Analysis Guidance (TAG) Unit A3 [15]

<sup>46</sup> Using external – internal level differences reported by Locher et al. (2018) [12], based on measurements at 102 dwellings in Switzerland in 2016.

- ii. The size of the population affected – for example an effect may be deemed significant if a large number of people are exposed to a relatively small noise change;
- iii. The relative change in number and type of vehicle pass-bys;
- iv. Changes in the temporal distribution of noise during day/evening/night, or between weekdays and weekends;
- v. Soundscape and tranquillity, in particular the value that communities put on the lack of environmental noise in their area, or conversely, on the lack of public areas within walking distance that are relatively free from environmental noise;
- vi. Opportunities for respite (predictable periods of relief from noise), either spatially or temporally;
- vii. Cumulative exposure to other environmental risk factors, including other sources of noise and air pollution,
- viii. Local health needs, sensitivities and objectives.

The WHO Environmental Noise Guidelines (2018) do not define LOAELs for environmental noise sources, partly because the scientific evidence suggests that there is no clear threshold where adverse impacts on health and quality of life cease to occur in the general population. Based on the systematic reviews that informed the 2018 WHO Environmental Noise Guidelines [2], the daytime operational noise LOAEL quoted in DMRB is equivalent to approximately 8% of the population Highly Annoyed<sup>47</sup>, and the night time LOAEL is equivalent to approximately 2% of the population Highly Sleep Disturbed<sup>48</sup>. Therefore, the impact assessment should acknowledge that adverse health effects will occur beyond the assessment threshold (LOAEL). PHE recommends that the Applicant explains what its chosen SOAELs for a specific scheme mean in population health terms in a similar fashion.

PHE does not believe that the current scientific evidence supports the modification of SOAELs and UAELs based on the existing noise insulation specification of residential dwellings, and in particular whether enhanced sound insulation avoids significant adverse effects on health and quality of life. See also sections on *Mitigation* and *Step Changes in Noise Exposure*.

### Health Outcomes

PHE encourages the applicant to present noise exposure data in terms of the  $L_{den}$  metric (in addition to  $L_{eq}$  and  $L_{10}$ ), to facilitate interpretation by a broad range of stakeholders. This is because most recent scientific evidence on the health effects of environmental noise is presented in terms of  $L_{den}$  [1, 5, 6]. PHE believes that quantifying the health impacts associated with noise exposure and presenting them in health-based metrics allows decision makers to make more informed decisions. For transportation sources, PHE recommends the quantification of health outcomes using the methodology agreed by the Interdepartmental Group on Costs and Benefits - Noise subgroup [IGCB(N) [23] (currently under review)], and more recent systematic reviews [1, 5, 6]. PHE believes there is sufficient evidence to quantify the following health outcomes: long-term annoyance, sleep disturbance, ischaemic heart disease (IHD), and potentially stroke<sup>49</sup> and diabetes<sup>50</sup>. Effects can be

---

<sup>47</sup> 55 dB  $L_{A10,18hr}$  (façade) is approximately equal to 57 dB  $L_{den}$  (free-field), assuming motorway traffic [13, 22]. Applying the exposure-response function presented in Guski et al., 2017 [19] for road traffic noise and annoyance (excluding Alpine and Asian studies), approximately 8% of a population is highly annoyed at 57 dB  $L_{den}$ .

<sup>48</sup> Applying the exposure-response function presented in Basner et al., 2018 [20] for road traffic noise and sleep disturbance gives the result that approximately 2% of a population is highly sleep disturbed at 40 dB  $L_{night}$ .

<sup>49</sup> A literature review commissioned by Defra [6] identified nine longitudinal studies on road traffic noise and incidence of stroke, and eight longitudinal studies on road traffic noise and stroke mortality.

<sup>50</sup> A literature review commissioned by Defra [6] identified four longitudinal studies on road traffic noise and incidence of diabetes.

expressed in terms of number of people affected, number of disease cases, and Disability Adjusted Life Years (DALYs). THE IGCB(N) guidance can also be used to translate these effects into monetary terms.

Some health outcomes, namely annoyance and self-reported sleep disturbance, can be influenced by the local context and situation. In these cases, it would be preferable to use exposure-response functions (ERFs) derived in a local context. However, PHE is not aware of any ERFs for road traffic being available for a UK context from data gathered in the last two decades. Therefore, in PHE's view the ERFs presented in the WHO-commissioned systematic reviews offer a good foundation for appraisal of the health effects associated with road traffic noise [2]. For annoyance, the average curve derived excluding Alpine and Asian studies may be considered more transferable to a UK context. For metabolic outcomes, no ERF was published in the WHO ENG 2018. A recent meta-analysis of five cohort studies of road traffic noise and incidence of diabetes was reported by Vienneau in 2019 [24].

Where schemes have the potential to impact a large number of people, PHE expects the Applicant to carry out literature scoping reviews to ensure that the most robust and up-to-date scientific evidence is being used to quantify adverse effects attributable to the Scheme.

PHE expects to see a clear outline of the steps taken to arrive at the final judgement of significance based on these health outcomes, including a description of local circumstances and modifiers anticipated, and how reasonably foreseeable changes in these circumstances will be dealt with during the assessment process.

### **Identification and Consideration of Receptors**

The identification of noise sensitive receptors in proximity to the proposed scheme - or route options - is essential in providing a full assessment of potential impacts. Examples of noise sensitive receptors include but are not limited to:

- Noise Important Areas
- Residential areas
- Schools, hospitals and care homes
- Community green and blue spaces and areas valued for their tranquillity, such as local and national parks
- Public Rights of Way (PRoWs)

Noise Important Areas (NIAs) are areas with the highest levels of noise exposure at a national level and as such require very careful consideration in terms of protection from increased noise levels as well as opportunities for noise mitigation that can lead to an improvement in health and quality of life. DMRB requires a list of noise mitigation measures that the project will deliver in Noise Important Areas. PHE supports this requirement - new development should offer an opportunity to reduce the health burden of existing transport infrastructure, particularly for those worst affected. PHE would encourage this approach to extend beyond NIAs, in line with the third aim of NPSE [3].

### **Baseline Sound Environment**

The greater the understanding of the baseline sound environment, the greater the potential for the assessment to reflect the nature and scale of potential impacts, adverse or beneficial, associated with the Scheme. PHE recommends that traditional averaged noise levels are supplemented by a qualitative characterisation of the sound environment, including any particularly valued characteristics (for example, tranquillity) and the types of sources contributing to it [25].

PHE recommends that baseline noise surveys are carried out to provide a reliable depiction of local diurnal noise variations for both weekdays and weekends, in a variety of locations, including the difference between day (07:00-19:00), evening (19:00-23:00) and night-time (23:00-07:00) periods.

This is particularly important if there are areas within the scheme assessment boundary with atypical traffic day/evening/night distributions. Achieving these aims is likely to require long-term noise monitoring in multiple locations for a period greater than seven days. This information should be used to test the robustness of any conversions between noise metrics (e.g. converting from LA10,18hr to LAeq,2300-0700 and Lden).

PHE suggests that a variety of metrics can be used to describe the sound environment with and without the scheme – for example, levels averaged over finer time periods, background noise levels expressed as percentiles, and number of event metrics (e.g. N65 day, N60 night) – and that, where possible, this suite of metrics is used to inform judgements of significance. There is emerging evidence that intermittency metrics can have an additional predictive value over traditional long-term time-averaged metrics for road traffic noise [27].

### **Mitigation**

PHE expects decisions regarding noise mitigation measures to be underpinned by good quality evidence, in particular whether mitigation measures are proven to reduce adverse impacts on health and quality of life. For interventions where evidence is weak or lacking, PHE expects a proposed strategy for monitoring and evaluating their effectiveness during construction and operation, to ensure the effectiveness of said measures.

With regards to road traffic noise, low-noise road surfaces, acoustic barriers, traffic management and noise insulation schemes can all be considered. Priority should be given to reducing noise at source, and noise insulation schemes should be considered as a last resort. PHE expects any proposed noise insulation schemes to take a holistic approach which achieves a healthy indoor environment, taking into consideration noise, ventilation, overheating risk, indoor air quality and occupants' preference to open windows. There is, at present, insufficient good quality evidence as to whether insulation schemes are effective at reducing long-term annoyance and self-reported sleep disturbance [28], and initiatives to evaluate the effectiveness of noise insulation to improve health outcomes are strongly encouraged.

PHE notes the suggestion in DMRB methodology that post-construction noise monitoring cannot provide a reliable gauge for reference against predicted impacts of operational noise. The issues highlighted in DMRB relate to noise exposure, and not to health outcomes. PHE suggests that monitoring of health and quality of life can be considered pre and post operational phases, to ascertain whether mitigation measures are having the desired effect for local communities. PHE expects consideration of potential adverse effects due to noise and vibration during construction and recommends that a full and detailed Construction Environmental Management Plan (CEMP) is developed and implemented by the Applicant and/or the contractor responsible for construction. PHE recommends that the CEMP includes a detailed programme of construction which highlights the times and durations of particularly noisy works, the measures taken to reduce noise at source, the strategy for actively communicating this information to local communities, and procedures for responding effectively to any specific issues arising.

There is a paucity of scientific evidence on the health effects attributable to construction noise associated with large infrastructure projects [5, 6] where construction activities may last for a relatively long period of time. PHE recommends that the Applicant considers emerging evidence as it becomes available and reviews its assessment of impacts as appropriate.

### **Green Spaces and Private Amenity Areas**

PHE expects proposals to take into consideration the evidence which suggests that quiet areas can have both a direct beneficial health effect and can also help restore or compensate for the adverse health effects of noise in the residential environment [29-31]. Research from the Netherlands suggests that people living in noisy areas appear to have a greater need for areas offering quiet than individuals who are not exposed to noise at home [29]. Control of noise at source is the most

effective mitigation for protecting outdoor spaces; noise insulation schemes do not protect external amenity spaces (such as private gardens and balconies or community recreation facilities and green spaces) from increased noise exposure.

PHE expects consideration to be given to the importance of existing green spaces as well as opportunities to create new tranquil spaces which are easily accessible to those communities exposed to increased noise from the scheme. These spaces should be of a high design quality and have a sustainable long-term management strategy in place.

### **Step-changes in Noise Exposure and the Change-effect**

The Applicant should take into consideration the “change-Effect”, i.e. the potential for a real or anticipated step-change in noise exposure to result in attitudinal responses that are greater or lower than that which would be expected in a steady state scenario [28, 32]. Where a perception of change is considered likely, PHE recommends that the change-effect is taken into account in the assessment for the opening year of the proposed development. For longer term assessments, the effects of population mobility need to be taken into consideration.

### **Community Engagement and Consultation Feedback**

PHE recommends that public consultations carried out during the planning application process clearly identify the predicted changes to the sound environment during construction and operation of the Scheme, the predicted health effects on neighbouring communities, proposed noise mitigation strategies and any proposed measures for monitoring that such mitigation measures will achieve their desired outcomes.

PHE encourages the Applicant to use effective ways of communicating any changes in the acoustic environment generated by the scheme to local communities. For example, immersive and suitably calibrated audio-visual demonstrations can help make noise and visual changes more intuitive to understand and accessible to a wider demographic. If the proposed scheme will have an impact over a relatively large geographical area, the Applicant should consider community-specific fact-sheets and/or impact maps, which are easily accessible to all individuals both in hard copy and online. If online, search functionality can potentially be included, for example, by postcode.

### **References:**

1. World Health Organisation, *Environmental Noise Guidelines for the European Region*. 2018.
2. Lercher, P., G. Aasvang, and Y.e. de Kluizenaar, *WHO Noise and Health Evidence Reviews*. International Journal of Environmental Research and Public Health 2018(Special Issue).
3. DEFRA, *Noise Policy Statement for England*. 2010.
4. United Nations. *Sustainable Development Goals*. 2020 01/06/2020]; Available from: <https://sustainabledevelopment.un.org/?menu=1300>.
5. Clark, C., C. Crumpler, and A.H. Notley, *Evidence for Environmental Noise Effects on Health for the United Kingdom Policy Context: A Systematic Review of the Effects of Environmental Noise on Mental Health, Wellbeing, Quality of Life, Cancer, Dementia, Birth, Reproductive Outcomes, and Cognition*. Int J Environ Res Public Health, 2020. **17**(2).
6. van Kamp, I., et al., *Evidence Relating to Environmental Noise Exposure and Annoyance, Sleep Disturbance, Cardio-Vascular and Metabolic Health Outcomes in the Context of IGCB (N): A Scoping Review of New Evidence*. Int J Environ Res Public Health, 2020. **17**(9).
7. Highways England. *Design Manual for Roads and Bridges*. 2020 29/05/20]; Available from: <https://www.standardsforhighways.co.uk/dmrb/>.
8. World Health Organisation, *Night Noise Guidelines*. 2009.
9. *The Noise Insulation Regulations*. 1975; Available from: <http://www.legislation.gov.uk/uksi/1975/1763/introduction/made>.
10. British Standards Institution, *5228-1: 2009+ A1: 2014 Code of practice for noise and vibration control on construction and open sites. Part 1: Noise*. 2014.

11. National Archives. *Committee on the Problem of Noise (Wilson Committee)*. 2020 [29/05/2020]; Available from: <https://discovery.nationalarchives.gov.uk/details/r/C10984>.
12. Locher, B., et al., *Differences between Outdoor and Indoor Sound Levels for Open, Tilted, and Closed Windows*. *Int J Environ Res Public Health*, 2018. **15**(1).
13. Department for Transport, *Calculation of Road Traffic Noise*. 1988.
14. Ministry of Housing, C.a.L.G., *Noise: Advises on how planning can manage potential noise impacts in new development*. 2014.
15. Department for Transport, *Transport Analysis Guidance Unit A3 Environmental Impact Appraisal*. 2019.
16. Job, R., *Community response to noise: A review of factors influencing the relationship between noise exposure and reaction*. *J. Acoust. Soc. Am.*, 1988. **83**(3).
17. Guski, R., *Personal and social variables as co-determinants of noise annoyance*. *Noise & Health*, 1999. **1**(3): p. 45-56.
18. Miedema, H. and C. Oudshoorn, *Annoyance from Transportation Noise: Relationships with Exposure Metrics DNL and DENL and Their Confidence Intervals*. *Environmental Health Perspectives*, 2001. **109**(4).
19. Guski, R., D. Schreckenberg, and R. Schuemer, *WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Annoyance*. *Int J Environ Res Public Health*, 2017. **14**(12).
20. Basner, M. and S. McGuire, *WHO Environmental Noise Guidelines for the European Region: A Systematic Review on Environmental Noise and Effects on Sleep*. *Int J Environ Res Public Health*, 2018. **15**(3).
21. McGuire, S., et al., *Inter-individual Differences in the Effects of Aircraft Noise on Sleep Fragmentation*. *Sleep*, 2016. **39**(5): p. 1107-10.
22. Abbott, P. and P. Nelson, *Converting the UK traffic noise index  $L_{A10,18hr}$  to EU noise indices for noise mapping*. 2002.
23. DEFRA, *Environmental Noise: Valuing impacts on sleep disturbance, annoyance, hypertension, productivity and quiet*. 2014.
24. Vienneau, D., et al., *Association between transportation noise and cardio-metabolic diseases: an update of the WHO meta-analysis*. 2019.
25. Standardization., I.O.f., *ISO 12913-1: 2014 Acoustics—soundscape—part 1: definition and conceptual framework*. 2014.
26. World Health Organisation, *Burden of Disease from Environmental Noise*. 2011.
27. Brink, M., et al., *A survey on exposure-response relationships for road, rail, and aircraft noise annoyance: Differences between continuous and intermittent noise*. *Environment international*, 2019. **125**: p. 277-290.
28. Brown, A.L. and I. Van Kamp, *WHO environmental noise guidelines for the European region: a systematic review of transport noise interventions and their impacts on health*. *International journal of environmental research and public health*, 2017. **14**(8): p. 873.
29. Health Council of the Netherlands. *Quiet Areas and Health*. 2006; Available from: <https://www.healthcouncil.nl/documents/advisory-reports/2006/07/04/quiet-areas-and-health>.
30. QSide. *The positive effects of quiet facades and quiet urban areas on traffic noise annoyance and sleep disturbance*. 2013; Available from: [https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n\\_proj\\_id=3669&docType=pdf](https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=3669&docType=pdf).
31. COST. *TD0804 - Soundscape of European Cities and Landscapes*. 2012; Available from: <https://www.cost.eu/actions/TD0804/#tabs|Name:overview>.
32. Brown, A., *Longitudinal annoyance responses to a road traffic noise management strategy that reduced heavy vehicles at night*. *The Journal of the Acoustical Society of America*, 2015. **137**(1): p. 165-176.



## **Proposed DCO Application by Highways England for the A27 Arundel Bypass**

### **Royal Mail response to EIA Scoping Consultation**

Under section 35 of the Postal Services Act 2011, Royal Mail has been designated by Ofcom as a provider of the Universal Postal Service. Royal Mail is the only such provider in the United Kingdom. The Act provides that Ofcom's primary regulatory duty is to secure the provision of the Universal Postal Service. Ofcom discharges this duty by imposing regulatory conditions on Royal Mail, requiring it to provide the Universal Postal Service.

Royal Mail's performance of the Universal Service Provider obligations is in the public interest and should not be affected detrimentally by any statutorily authorised project. Accordingly, Royal Mail seeks to take all reasonable steps to protect its assets and operational interests from any potentially adverse impacts of proposed development.

Royal Mail and its advisor BNP Paribas Real Estate have reviewed the EIA Scoping consultation document dated 25 February 2021. This infrastructure proposal has been identified as having potential for impact on Royal Mail operational interests. However, at this time Royal Mail is not able to provide a consultation response due to insufficient information being available to adequately assess the level of risk to its operation and the available mitigations for any risk. Therefore, Royal Mail wishes to reserve its position to submit a consultation response/s at a later stage in the consenting process and to give evidence at any future Public Examination, if required.

In the meantime, any further consultation information on this infrastructure proposal and any questions of Royal Mail should be sent to:

**Holly Trotman (██████████@royalmail.com), Senior Planning Lawyer, Royal Mail Group Limited**

**Daniel Parry Jones (██████████@realestate.bnpparibas), Director, BNP Paribas Real Estate**

Please can you confirm receipt of this holding statement by Royal Mail.

End

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Cc:** [REDACTED]  
**Subject:** RE: TR010045 A27 Arundel Bypass Environmental Impact Assessment Scoping Notification .....Response from Slindon Parish Council  
**Date:** 01 April 2021 07:39:37  
**Attachments:** [image001.jpg](#)  
[image002.jpg](#)  
**Importance:** High

---

Dear Karen,

Thank you for your email.

Slindon Parish Council met last night and has instructed me to respond as follows.

**Application by Highways England (the Applicant) for an Order granting Development Consent for the A27 Arundel Bypass (the Proposed Development) - Scoping Consultation**

Slindon Parish Council is concerned at the choice of route with widespread implications for the environment and failure to invest in ways to manage and reduce traffic on the roads as an alternative to construction of a new road. It believes that the construction will merely shift the bottleneck at peak times from Arundel to its own doorstep in Fontwell and create environmental issues both during and after construction.

Although the proposed route lies outside the South Downs National Park, it is adjacent to it, lying on the southern boundary, Bigger roads such as this increase traffic and carbon emissions, destroy valuable wildlife habitats and local communities, impacting the unique setting and special qualities of the nearby South Downs National Park.

The long-term impacts for Slindon may be less than those of neighbouring Walberton, Binsted, Tortington and the Arun Valley, although the primary impacts of the new scheme have the potential to create secondary impacts, including aspects such as noise and air pollution, in direct conflict with the special qualities of the National Park. Shellbridge Road is linked to Walberton and meets the B2233 at Yapton. We would like to preserve it as a quiet rural road where wildlife can be seen and enjoyed rather than a speedy rat run to the A29.

Distinctive towns and villages, and communities with real pride in their area is another special quality of the South Downs National Park and the busy A27 corridor which will skirt the South Downs National Park must be managed with sensitivity and maintain a 'sense of place'. It provides the ideal opportunity to deliver a highways scheme which incorporates environmentally friendly features.

The road construction must seek to be as aesthetically pleasing as it can be, as unintrusive as possible in terms of noise and visual impact, adapted to the environment and less damaging to habitats. Tranquil and unspoilt places is identified as one of the South Downs National Park's special qualities and this could be delivered through use of plants to screen the road, camouflaging of ugly concrete and painting of crash barriers to blend with planting.

In 2017 Highways England contributed to a collaborative research project which resulted in the publication of "The Matthew Muirhead Report New Asphalt Surfacing", dealing predominantly with noise from road surfaces with a commitment to long term monitoring of noise measurement and durability. In the late 1980s when a new section of the A27 was constructed it did not follow a route very close to local villages as the Grey route does, yet because of a cheaper option of asphalt for the road surface, the noise level was very intrusive.

The Grey Route of the proposed Arundel Bypass affects a number of local villages and mitigation from the effects has been promised. The Slindon Parish Council will continue to support the parishes of Walberton, Binsted and Fontwell and all other villages and hamlets near the new route. We ask that the choice of a road surface which ameliorates noise pollution for people living and working near the new Bypass will be considered as essential. The new Open Graded Friction Course (OGFC) which is an asphalt mix and is more porous has been revealed to cut noise by 8 decibels. It is used extensively in the USA and perhaps might be a good option.

In conclusion, whilst there are many ways that the impacts of the route can be mitigated, in the light of shifting working practices with many more people now working from home the current project should surely be put on hold and avoid a scheme which isn't actually needed or indeed wanted.

Kind regards,

Sarah

SLINDON PARISH COUNCIL  
Clerk: Mrs Sarah Linfield BSc(Hons), CILCA  
Email To: [clerk@slindonparishcouncil.gov.uk](mailto:clerk@slindonparishcouncil.gov.uk)  
Website: <http://www.slindonparishcouncil.gov.uk/>

**CONFIDENTIALITY NOTICE**

This e-mail might contain privileged and/or confidential information. If you have received this e-mail in error, please notify the sender and delete the e-mail immediately; you may not use or pass it to anyone else. Whilst every care has been taken to check this outgoing e-mail for viruses, it is your responsibility to carry out checks upon receipt.

Slindon Parish Council does not accept liability for any damage caused. E-mail transmission cannot guarantee to be secure or error free.

This e-mail does not create any legal relations, contractual or otherwise. Any views or opinions expressed are personal to the author and do not necessarily represent those of Slindon Parish Council. This Parish Council does not accept liability for any unauthorised/unlawful statement made by an employee.

Information in this e-mail may be subject to public disclosure in accordance with the law. Slindon Parish Council cannot guarantee that it will not provide this e-mail to a third party. The Parish Council reserves the right to monitor e-mails in accordance with the law.

If this e-mail message or any attachments are incomplete or unreadable, please e-mail [clerk@slindonparishcouncil.gov.uk](mailto:clerk@slindonparishcouncil.gov.uk). Any reference to "e-mail" in this disclaimer includes any attachments.

---

**From:** A27 Arundel Bypass <[A27ArundelBypass@planninginspectorate.gov.uk](mailto:A27ArundelBypass@planninginspectorate.gov.uk)>  
**Sent:** 04 March 2021 14:39  
**Subject:** TR010045 A27 Arundel Bypass Environmental Impact Assessment Scoping Notification

Dear Parish Clerk

Please see attached correspondence on the proposed A27 Arundel Bypass.

Please note the deadline for consultation responses is Thursday 1<sup>st</sup> April, and is a statutory requirement that cannot be extended.

Regards  
Karen

Karen Wilkinson  
Environmental Services Advisor  
Environmental Services  
Direct Line: [REDACTED]  
Helpline: 0303 444 5000  
Email [\[REDACTED\]@planninginspectorate.gov.uk](mailto:[REDACTED]@planninginspectorate.gov.uk)

Web: <https://infrastructure.planninginspectorate.gov.uk/> (National Infrastructure Planning)  
Web: [www.gov.uk/government/organisations/planning-inspectorate](http://www.gov.uk/government/organisations/planning-inspectorate) (The Planning Inspectorate)  
Twitter: @PINSgov

This communication does not constitute legal advice.  
Please view our [Privacy Notice](#) before sending information to the Planning Inspectorate.



*Please note that the contents of this email and any attachments are privileged and/or confidential and intended solely for the use of the intended recipient. If you are not the intended recipient of this email and its attachments, you must take no action based upon them, nor must you copy or show them to anyone. Please contact the sender if you believe you have received this email in error and then delete this email from your system.*

*Recipients should note that e-mail traffic on Planning Inspectorate systems is subject to monitoring, recording and auditing to secure the effective operation of the system and for other lawful purposes. The Planning Inspectorate has taken steps to keep this e-mail and any attachments free from viruses. It accepts no liability for any loss or damage caused as a result of any virus being passed on. It is the responsibility of the recipient to perform all necessary checks.*

*The statements expressed in this e-mail are personal and do not necessarily reflect the opinions or policies of the Inspectorate.*

DPC:76616c646f72



31 March 2021

The Planning Inspectorate  
Environmental Services  
Central Operations  
Temple Quay House  
2 The Square  
Bristol, BS1 6PN

**Sent via email only**

**Your Reference:** TR010045-000009  
**Our Reference:** SDNP/21/01333/SCOPE

Dear Sirs,

**Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11**  
**Application by Highways England (the Applicant) for an Order granting Development Consent for the A27 Bypass (the Proposed Development)**

Thank-you for your letter dated 04 March 2021, requesting comments from the South Downs National Park Authority (SDNPA) on the applicant's report that accompanied their request for a Scoping Opinion from the Secretary of State.

**General Comments**

We welcome the acknowledgement in the objectives that the scheme will “respect the SDNP and its special qualities in decision making” and “deliver a scheme that minimises environmental impact and seeks to protect and enhance the quality of the surrounding environment through its high-quality design”. However, we would like to see these objectives strengthened to reflect the duty of public bodies to have regard to the statutory purposes of designation. Namely to:

- Conserve and enhance the natural beauty, wildlife and cultural heritage; and
- Promote opportunities for the understanding and enjoyment of the special qualities of National Parks by the public.

We would like to see this reiterated when the South Downs National Park (SDNP) is mentioned in para 2.3.4. In particular, we would stress that the SDNP is a nationally recognised landscape designated for its natural beauty and opportunities for open-air recreation. This same paragraph describes the scheme as lying outside of the SDNP boundary; however, the scheme also includes de-trunking of part of the existing A27, which lies almost wholly within the National Park.

Whilst the new road is primarily adjacent to the SDNP boundary, we would also describe it as falling within the setting of the National Park. National Policy Statement for National Networks (NPSNN) para 5.154 states that development outside nationally designated areas which might affect them should be considered against the purposes of designation. At this stage, based on the level of information submitted as part of the Scoping Opinion, it is difficult to assess the impacts on the SDNP and its statutory purpose.

The landscape and environment-led approach outlined in section 2.5 is welcomed in principle, although we would advise that this section should also reference the historic environment as well, e.g. natural and historic environment capital and natural and historic environment assets. Further, capturing enhancements to the historic environment should also be included. We would also request the following be added as multiple benefits in paragraph 2.5.5:

- Optimising landscape mitigation to enhance landscape character and sense of place, and
- Habitat creation, which enhances the setting to heritage assets and furthers enjoyment and understanding.

Whilst the proposed scheme is described in general terms in section 2.6, we note that no red line boundary is provided at this stage nor information on the height of the road or bridge crossings, extent of embankments or cuttings or whether the crossing of the River Arun will include a viaduct. As more detail is provided by the applicant, we reserve the right to review our position on the assessment of effects.

We welcome the consideration of a tailored approach to mitigation and development of an environmental masterplan as set out in para 4.4.5. However, to effectively achieve this we would expect detailed surveys of landscape, hydrology and cultural heritage as well as biodiversity to inform the proposed scheme design (para 4.4.6). We also welcome environmental net gain (para 4.4.9) but again would not limit baseline assessments to biodiversity but would also expect, for example, landscape and recreation to all feed into the design of the scheme and deliver multi-functional benefits. Opportunities to deliver mitigation in combination with other proposed/existing schemes should also be considered.

We note the SDNP special qualities assessment was carried out as part of the Stage 2 Route Options as set out in paras 5.5.11-5.5.12. We welcome ongoing engagement to ensure the special qualities are considered as part of Stage 3 design development. We request a more detailed consideration of the National Park special qualities within the study area as part of the LVIA to ensure that the design of the route and optimisation of mitigation takes these qualities into account.

The following table provides the SDNPA comments in relation to particular chapters of the report.

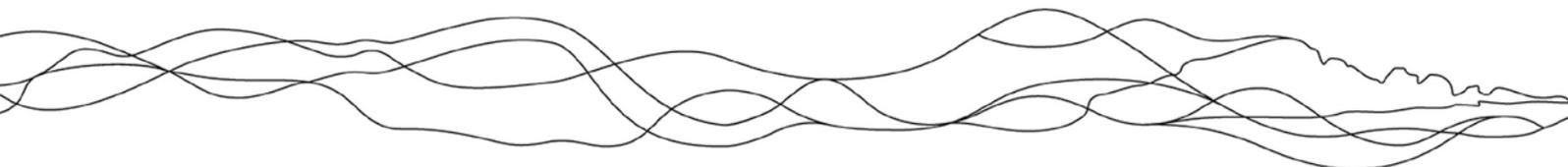
Para No.	Text	Recommended Action
<b>Air Quality</b>		
6.4.14.	Further detailed reviews of designated habitats will be undertaken once the ARN for the proposed scheme is determined in later stages of assessment.	Clarification of how the detailed reviews on the impact that air pollutants could have on designated habitats, ancient woodlands and veteran/ancient trees to be provided.
6.5.1. 6.6.1. 6.8.3 6.8.9	The proposed scheme has the potential to affect local air quality, both during construction and once in operation...	Include specific section on mitigation and control measures in relation to designated features / habitats / woodlands / veteran trees in the CEMP.
<b>Cultural Heritage</b>		
7.5.2	Construction of the proposed scheme has the potential to affect heritage assets in the following ways...	Reference should be made to impacts around in situ preservation (for example, in relation to archaeology) from changes in soil saturation, water management etc. during and post construction. Water monitoring should be included in the archaeological mitigation strategy, to demonstrate whether viable preservation conditions will be present after development or land-use change.

7.5.3	Operation of the proposed scheme has the potential to result in impacts on the setting of heritage assets. These impacts would commence during construction of the proposed scheme and continue during operation; however, the degree of impact may vary between phases.	It is recommended that the applicant make clear that there will be additional impacts caused to the setting of heritage assets post- construction, in the long term.
7.7.5	Mitigation measures through avoidance will be considered for high value archaeological assets throughout the evolving proposed scheme design. Where avoidance or preservation in situ is not possible, a programme of archaeological excavation and recording, to a level commensurate to the significance of the remains, may be employed to offset the impact to the archaeological resource.	In addition to focussing on excavation and recording of remains, mitigation should also include opportunities to better understand paleo- environmental and geo-archaeological significance.
7.8.20	Sources of information that will be consulted include, but will not be limited to...	We would advise including available LiDAR data here.
7.9	Assumptions, limitations and uncertainties	<p>It would be useful to know what data was assessed for the purposes of the Scoping Review, whether this was limited to publically accessible data sets or data sets provided by consultees in the process (i.e. WSCC HER data as a minimum etc.).</p> <p>There should be acknowledgement that the site walkover may result in a more complete and up to date set of baseline data to use as the basis for the impact assessment and for informing the development of mitigation measures are recommended.</p>
<b>Landscape and Visual</b>		
8.3.4	Description of Study Area	We note the description of the study area, however this is not mapped; we advise a map is provided. We note that the study area is likely to be refined and welcome the opportunity to comment on any refinement, particularly where judgements are made regarding the level of effects within the SDNP. In particular, we would like to comment and review whether the study area is adequate for the scheme as a whole, given there are landscape impacts associated both with the design of the flood scheme and wider mitigation package.
8.3.7	Arboricultural Study Area	We would welcome the opportunity to comment further as the scheme develops.
8.4	Landform and hydrology	Reference should be made to the raised flood embankments, which are a key landform in the otherwise flat floodplain. Reference should also be made to the gently rising land that defines the valley sides of the Arun to the south of Arundel.

8.4.11	Settlement Pattern and Infrastructure	We recommend the applicant amend to the following: “Across <b>this part of the SDNP</b> , the settlement pattern...”
8.4.14	Land use	The land both within the SDNP and to the south of the boundary (through which the route will pass) is considered to have a predominantly rural character, despite a higher incidence of development further south. Reference should also be made to the pattern of arable and pasture land use, scattered rural villages and farmsteads, intimate hidden valleys and winding lanes.
8.4.22	Public Rights of Way	We would request that reference be made to the rural lanes within the study area, which are extensively used for recreation.
8.4.23	Designations	Reference should be made to the de-trunking works, which are within the SDNP.
8.4.24	Designations (International Dark Skies Reserve – IDSR)	Whilst reference is made to the IDSR, we are of the view that the significance has been downplayed. Part of the study area is within Zone EIA: Intrinsic Zone of Darkness, where the SDNPA’s Technical Advice Note (TAN) states, “Although these areas are consistently brighter than the core and buffer areas, as skies of sufficient IDSR quality, they remain of value to protect and distinguish from other areas of the park that are brighter”. Please see appendix I for a map showing the relevant zones. The significance of dark skies in this location therefore needs to be considered more fully. Further, the SDNPA Dark Night Skies TAN should be referenced in the chapter.
8.4.31	Tranquillity	We do not agree that around the boundaries of the SDNP, tranquillity is ‘low’. There are areas where higher levels of tranquillity exist within the study area and we would expect these variations to be identified. For the purposes of the LVIA, we would request LCA descriptions and fieldwork to be relied upon, to inform a local assessment of tranquillity. We would also expect reference to the prevailing wind in the study area, which is likely to carry noise of traffic on the proposed route into the SDNP. Please also see comments on Chapter 12 below.
8.4.32	Landscape Character Baseline	The applicant should please reference and use the latest version of the SDNPA’s Landscape Character Assessment (2020) – available online, and note there have been some changes in terms of the typology relevant to this location. We would also wish to see reference to Historic Landscape Characterisation, in accordance with NPSNN para 5.145. The study area demonstrates a variety of time-depth and continuity of patterns. We would welcome the opportunity to comment on the definition of Local Landscape character areas prior to their use in the LVIA.
8.4.34	Reference to other studies	We would wish to see reference to Historic Landscape Characterisation in the assessment of landscape effects as well as coordination between the assessment on

		Cultural Heritage assessment and Landscape. This is an important part of understanding the landscape baseline and in developing appropriate mitigation.
8.4.35 – 8.4.40	Viewpoint Locations	<p>We are disappointed that no representative viewpoint locations have been provided at this stage, given the considerable work already undertaken in defining viewpoints for the route options in 2019.</p> <p>We note the groups of visual receptors in Table 9 and would suggest the following are added:</p> <ul style="list-style-type: none"> <li>• Residents – Crossbush and Lymister, Broomhurst Farm and Torrington Place.</li> <li>• Recreational Users – Long distance recreational routes and minor lanes also used for recreation.</li> </ul> <p>We would also request that representative viewpoints reflect views from the various local character areas affected as well as demonstrating coordination with heritage receptors such as Arundel Castle. We also believe it is imperative the viewpoints are selected with reference to the South Downs Views Assessment (2015) both in terms of views into and out of the National Park and in association with key landmarks (Arundel Castle Landmark 18).</p> <p>We would expect the previously identified viewpoints shown on Figure 7-10 (2019) to form a good starting point for identifying receptors, but we would also wish to see included:</p> <ul style="list-style-type: none"> <li>• Elevated views looking east from Priory Lane</li> <li>• Additional views from Monarch’s Way south of the preferred route to consider sequential views</li> </ul> <p>We look forward to engaging regarding the identification of the representative viewpoints and it is critical that a ZTV is prepared as part of the consultation, to inform discussion. We would encourage the use of a series of ZTVs looking at different components of the scheme in order to establish the effects of individual elements of the proposals and also in order to inform and finalise the selection of representative viewpoint locations.</p> <p>We would like to see effects on Long Distance Routes assessed separately, with a description of effects on sequential views (e.g. Monarch’s Way).</p>
8.5.2	Construction phase impacts	Please add the effect of storage areas including topsoil, ancillary development such as signage, CCTV masts and lighting columns.
8.5.3	The above are likely to result in localised, temporary adverse impacts to visual receptors...	We object to the reference that the effects of the development during construction are ‘localised’. It is not possible at this stage to know this.

8.5.5	Likely landscape and visual effects	<p>Please add reference to ‘new highway structures across Binsted and Tortington Rifes’ under the second bullet point.</p> <p>We would also like to see a point specifically referencing effects on the purposes of SDNP designation. Additionally, the last bullet point should be adjusted to consider nighttime effects from additional light sources and effects on SDNP dark night skies.</p> <p>Other effects that should be considered under this heading include:</p> <ul style="list-style-type: none"> <li>• Effects on topography</li> <li>• Effects on open agricultural land</li> <li>• Effects on recreation and enjoyment</li> <li>• Cumulative effects with other road infrastructure in the area.</li> </ul>
8.6.2	Specific landscape and visual mitigation	<p>Given the potential for new structures such as viaducts and bridges, we would like to see consideration given to colour, form and materials. Further, we would expect mitigation to include habitat creation that reflects and reinforces local character.</p> <p>Any proposals for new tree planting in relation to the scheme or as part of wider enhancement proposals should also pay due diligence to historic environment impacts (right tree, right place).</p> <p>We also request that the red line boundary to the scheme is not set until mitigation measures are developed to ensure that they can be implemented at a landscape scale and not restricted to a narrow corridor along the route of the road. If this were not possible, we would request that provision be made for off-site mitigation.</p> <p>We would advise the development of mitigation measures which are grounded in an understanding of the special qualities of the National Park and local areas and which seek not just to minimise the adverse effects, but also actively seek enhancement of the landscape and special qualities including through the reduction in existing effects of road infrastructure on the National Park. Therefore, we would wish to see an assessment of the positive measures that could be implemented in relation to the de-trunking of the existing A27, where it cuts through the National Park, and for opportunities to improve connections and recreational experiences.</p>
8.7.1	Likely Effects	<p>We would like to see reference to the introduction of vehicular movements in the landscape. We would also wish to see the removal of ‘local’.</p>



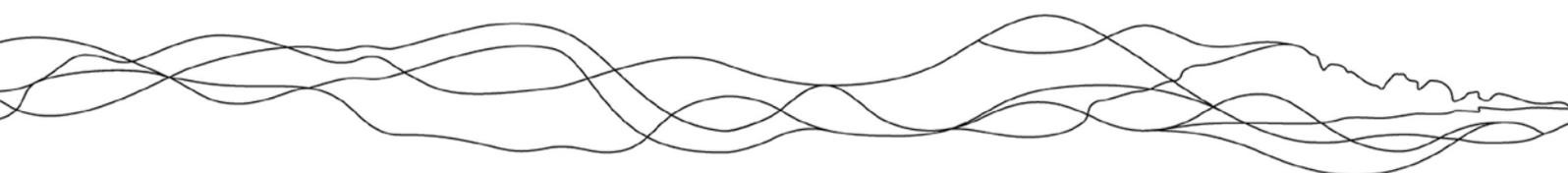
8.8	Assessment Methodology	<p>At 8.8.3, an assessment of whether the proposed scheme furthers the purpose of designation should also be carried out, rather than just assessment of the Special Qualities.</p> <p>8.8.4 refers to tranquillity but provides no detail of how this will be assessed or considered. Further detail is therefore required. See also comments below on Chapter 12.</p> <p>The assessment of effects should also refer to the Heritage Assessment and the SDNP Views study.</p>
8.8.8	Landscape Value	<p>No reference is made to the criteria used to assess landscape value. We would expect some description of the method to be used to define the value of the landscape outside of the SDNP, especially given its role as a setting to both the SDNP and Arundel Castle. Reference should also be made to GLVIA box 5.1 and the recent Landscape Institute publication (Landscape Value and Valued Landscapes, A Technical Guidance Note, Consultation Draft 02/21).</p>
8.8.9	Landscape Susceptibility	<p>Table 11 makes little distinction between the moderate and low categories. We suggest that moderate should state “Landscape able to accommodate some limited change” to help make the distinction.</p>
8.8.14	Visual Value	<p>Within Table 14, reference should be made to important views including those identified in the Viewshed Study, including key landmarks that contribute to the Special Qualities, and sequential views from long distance routes that are focussed on the landscape.</p>
8.8.15	Visual Susceptibility	<p>Reference should be made to uninterrupted sequential views as well as transient views.</p>
8.8.20	Significance of Effects	<p>We note that table 18 sets out a significance matrix to guide professional judgement. We also note in paragraph 8.8.20 that where the effect could be one degree or another, professional judgement will be used to determine the significance of effect. We would suggest that profession judgement provides a commentary on where the effects lie within the spectrum between the two categories. To do otherwise runs the risk of downplaying or overstating effects. We therefore recommend that the wording in the table is changed from for example ‘moderate <u>or</u> large’ to ‘moderate <u>to</u> large’.</p>
8.8.26	Night-time Effects	<p>Whilst reference is made to a nighttime visual assessment for residents and recreational users within the SDNP, all other users are scoped out. We do not consider this acceptable not least because of important views towards Arundel Castle (which is lit at night) from locations outside of the Park and the extent to which these views contribute to the appreciation and enjoyment of the Park.</p>

<b>Biodiversity</b>		
9.1.3 9.4.12 and 9.5.1	The scope of additional field surveys that are required to update the existing baseline information are described in Table 17. These surveys will focus on addressing gaps in the existing baseline information and confirming data for selected ecological features.	We welcome the comprehensive list of surveys. However as habitat connectivity is of such significance, a further piece of work that maps habitat connectivity and potential impacts should also be provided (which includes veteran/ancient trees and hedgerows).
9.4.8	Table 20 Notable habitats	Owing to their significance, chalk streams should be included as a separate habitat type (e.g. Binsted and Tortington Rifes).
9.4.9 Table 21	Table 21 Protected and Notifiable species within the study area.	Table should be updated to reflect that Toads are known to be present – large numbers use Madonna Pond for breeding every year.
9.4.13	The River Arun falls within a tidal reach and although it is not directly impacted by the proposed scheme there is potential for some indirect impacts.	We consider that the installation of a bridge over the River Arun will have direct impacts, particularly on the migration of species and should therefore be included in all the proposed surveys
9.4.14	Surveys for arable weeds have been scoped out as it is considered that there is already sufficient evidence to inform the ecological assessment.	SDNPA agree with this statement.
9.5	Potential impacts - bats	The impact of lighting on bats (foraging and roosting) could be significant and should be taken into account for both the construction and operation stages.
9.5.3	Arun Valley SPA/Ramsar. Therefore, there is considered to be no likelihood of adverse effects upon the bird populations that are qualifying features of the Arun Valley SPA/Ramsar and no further assessment or mitigation is required.	We would note that there could be in-combination effects that may result in a significant impact to the Arun Valley SPA/Ramsar (e.g. Rampion 2 cabling) and we would expect this to be considered as part of the HRA.
9.5.4.	The potential for the loss of any veteran trees is currently unknown, although the emphasis will be on the retention of these features where possible. However, the proposed scheme has the potential to lead to indirect ecological impacts upon designated sites of nature conservation importance through the degradation of habitats, which may occur because of alterations in air quality and hydrology (including water quality).	In order to ensure appropriate compensation and mitigation measures, identification of veteran/ancient trees and the preparation of a plan, including protection of features during construction phase and mitigation/compensation measures if loss is unavoidable is advised.

9.5.6.	Operation of the proposed scheme has the potential to result in the degradation of priority habitats through alterations in hydrology (including water quality) or air quality. Priority species and other notable species may also be impacted through increased incidence of accidental mortality as a result of vehicle collisions or displacement from favoured habitats through increased levels of noise or light disturbance.	There is potential for degradation of priority habitats due to fragmentation and alterations in hydrology – it will be important to understand those impacts in order to avoid/minimise them and to propose mitigation measures.
9.6.2	Potential measures for reducing or offsetting effects on important ecological features	Make specific mention of de-trunking the existing A27 between Crossbush and Tye lane in the scoping document and the opportunities this provides. Also specifically mention quality green bridges as one of the key potential measures that will be considered for reducing or offsetting effects on important ecological features.
9.7.1	Following the implementation of embedded mitigation and standard control measures, it is considered that <b>significant adverse effects</b> upon important ecological features <b>could be limited</b> to ... (emphasis added)	We would just comment that the list of significant adverse effects upon important ecological features is substantial.
<b>Geology and Soils</b>		
10.5.1	Assessment of the impact in Geological Features is adequately scope in – and reference is made to consulting with Local Groups.	We welcome the opportunity to comment further in respect of the approach to address geological impacts. However we would advise at the outset that Quaternary features are included in the survey as well as geo-archaeological expertise. For these, the SDNP as a whole should be considered a heritage asset.
10.5.2.	During proposed scheme construction, there is the potential for physical damage to soil and soil compaction as a result of heavy construction vehicle movements and exacerbation of soil erosion through handling and storage of soils. The potential effect is considered to be temporary and will be avoided, prevented and reduced through the implementation of standard mitigation measures to be incorporated into a CEMP (and outlined in the OEMP).	There is potential for soil compaction around veteran/ancient trees. Mitigation measures should be included as part of a Construction Environmental Management Plan.
<b>Material Assets and Waste</b>		
General	Please include reference to the updated WSCC Minerals Plan, which is due to be published w/c 30 March 2021. The SDNPA plan jointly with WSCC in terms of Minerals and Waste for the National Park area.	

<b>Noise and Vibration</b>		
General	Further clarity of how tranquillity will be assessed should be provided: either as part of the landscape assessment and/or part of noise and vibration. Receptors for tranquillity should also include those using woodland and Rights of Way users.	
<b>Population and Human Health</b>		
13.1.1	Severance/accessibility and the ability of communities to access community land, assets and employment	Whilst we agree with the proposed scope, we would advise including Public Rights of Way under Human Health, as receptors for severance impact.
13.2	Relevant Policy	National policy should include recent government strategy for cycling Gear Change and also LTNI/20 design guidance for cycling infrastructure as this will be relevant for mitigation proposals. WSCC Walking and Cycling Strategy should also be included.
13.2.2	Local policies to be considered	
13.4.14	There is also a narrow strip of land north of Tortington, known as Broad Green Waste, which is registered as Common Land under the Countryside and Rights of Way Act 2000	Correction: the registration of this parcel of land CL211 was much earlier and the details pertaining to its registration are held by the Registration Authority, which is WSCC.
13.4.18	Baseline information for these public rights of way will be informed by a Walking Cycling and Horse Rider Assessment and Review (WCHAR). This report will consider the frequency of use for each PRow	As frequency of use is unlikely to yield much useful information, it is recommended the baseline assessment also considers connectivity of each PRow with the wider rights of network and also captures evidence of any historic network severance for example that caused by earlier road schemes which may have impacted on use by walkers, cyclists and horse riders.
13.5.2 13.5.5 13.5.7	Community land and assets during construction	We agree with the need to assess access to community assets. We would advise investigation of any extant Commoners rights, and note statutory processes required under Commons Act 2006 in relation to consent for works on registered commons.
13.9.1	The assessment of the impacts on WCHs will depend on the availability of the relevant findings from WCHAR.	Ensure scope of WCHAR is widened to include network connectivity, historic severance, potential to address severance through reconnections and scope for avoiding severance and scope for securing higher rights on paths – e.g. upgrading of footpaths to bridleways to facilitate access for a wider range of users.
<b>Road Drainage and the Water Environment</b>		
14.4.5	Although the Arun waterbody is associated with 'protected area' status, the qualifying feature (Arun Valley SPA and SAC) is located several kilometres upstream of the proposed scheme and outside of the study area.	This does not align with the SAC being scoped in for HRA elsewhere. Therefore, the study area for HRA should be extended.

We trust the information above will be of assistance to the Secretary of State in forming their scoping opinion. We would welcome the opportunity to continue working with the applicant in order to



resolve the issues raised in our response. If you have any queries regarding the above please contact [REDACTED], Principal Planning Officer on [REDACTED] or [REDACTED] [@southdowns.gov.uk](mailto:[REDACTED]@southdowns.gov.uk).

Yours faithfully

[REDACTED]

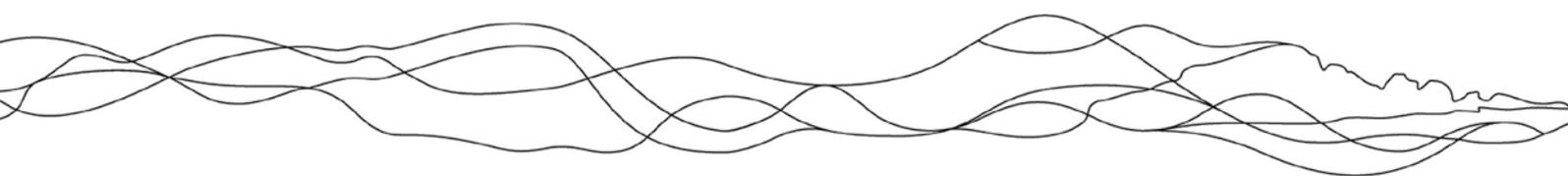
Tim Slaney  
Director of Planning  
South Downs National Park Authority

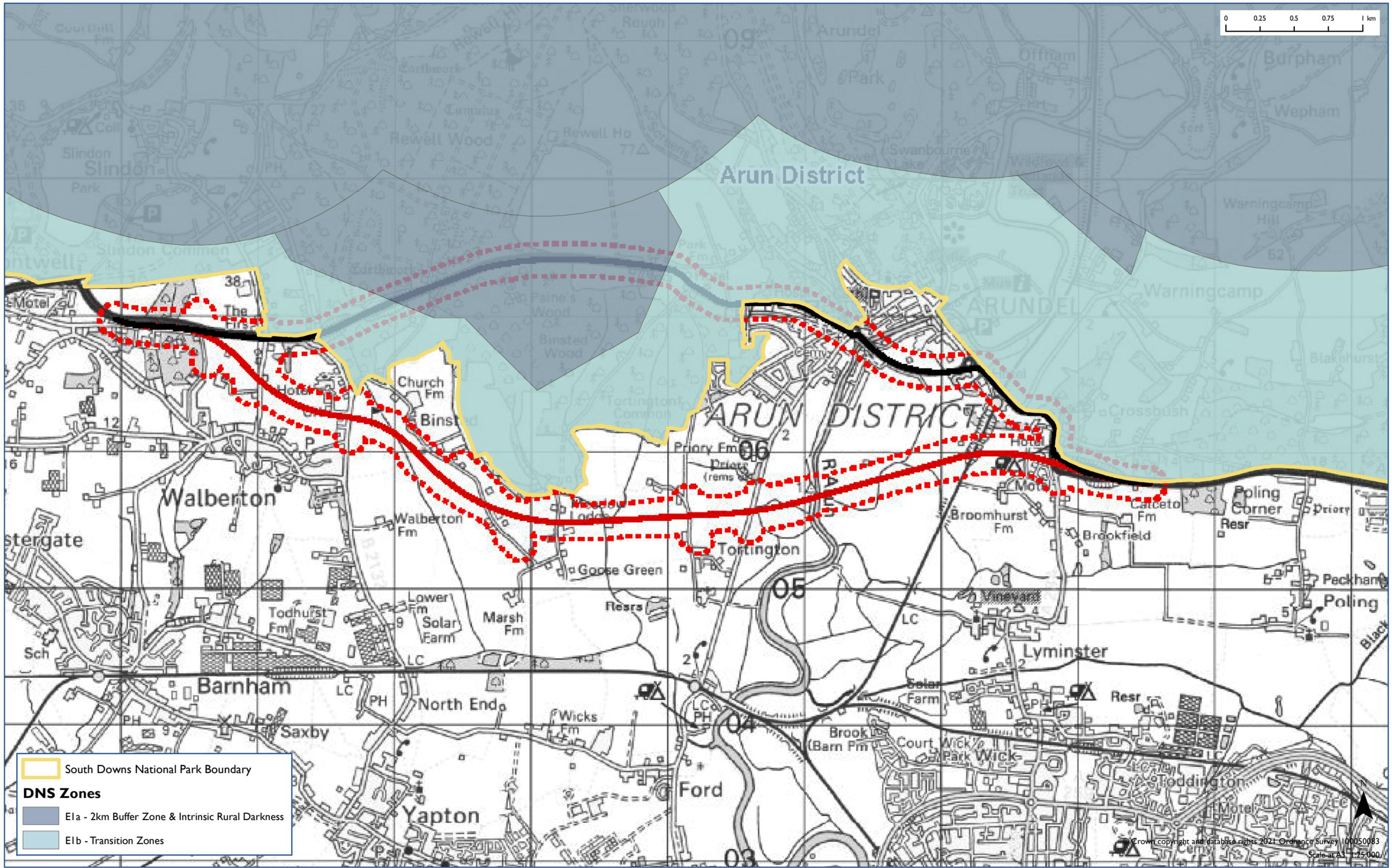
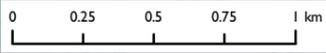
South Downs Centre, North Street,  
Midhurst, West Sussex, GU29 9DH

T: 01730 814810

E: [info@southdowns.gov.uk](mailto:info@southdowns.gov.uk)  
[www.southdowns.gov.uk](http://www.southdowns.gov.uk)

Chief Executive: Trevor Beattie





**Email:** [planning.consultations@surreycc.gov.uk](mailto:planning.consultations@surreycc.gov.uk)



Environmental Services  
Central Operations  
Temple Quay House  
2 The Square  
Bristol, BS1 6PN

Your Ref: TR010045-000009

**Environment, Transport &  
Infrastructure Directorate**  
Planning Group  
Surrey County Council  
Quadrant Court  
35 Guildford Road  
Woking  
GU22 7QQ

Emailed to: [a27arundelbypass@planninginspectorate.gov.uk](mailto:a27arundelbypass@planninginspectorate.gov.uk)

18 March 2021

Dear Ms Wilkinson

**Planning Act 2008 (as amended) – and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) – Regulations 10 and 11 Application by Highways England (the Applicant) for an Order Granting Development Consent for the A27 Arundel Bypass (the Proposed Development)**

I refer to your letter dated 04 March 2021 concerning the above request.

As requested in your official letter, Surrey County Council would like to confirm that we have no comments to make regarding the proposed development.

Yours sincerely,

Steph Hamill

Minerals and Waste Planning Policy Team

**From:** [REDACTED]  
**To:** [A27 Arundel Bypass](#)  
**Subject:** Response to your letter of 4th March (TR010045-000009)  
**Date:** 31 March 2021 18:32:48

---

Good afternoon

I am responding on behalf of Sussex Community NHS Foundation Trust. We're grateful to have been given the opportunity to provide feedback in relation to the above scheme and I can confirm that we have no specific comments to make at this stage.

That said, since we operate a number of healthcare services within this area (both inpatient and community) that may be impacted as the works get underway, it would be helpful if we could be copied in to any future communications/ consultations etc. This will ensure we are able to notify staff, sites and service users as required and make plans to mitigate the impact of the development as it progresses in terms of road traffic, access to sites etc.

Many thanks in anticipation

Jim

Jim Thomas  
Head of Logistics  
**Sussex Community NHS Foundation Trust**

Bramber Building, Brighton General Hospital, Elm Grove, Brighton BN2 3EW

[REDACTED] (calls only) / [REDACTED] [@nhs.net](#)

**Working days: Monday to Thursday**

The Fleet & Travel Services Privacy Notice can be found here: <http://thepulse.sussex.nhs.uk/downloads/working-life/travel-mileage/fleet-travel-services-privacynotice.pdf> or can be requested by emailing [SC-TR.TravelBureau@nhs.net](mailto:SC-TR.TravelBureau@nhs.net)

If you are making a request under the Freedom Of Information Act please contact [SC-TR.InfoGov@nhs.net](mailto:SC-TR.InfoGov@nhs.net)

\*\*\*\*\*

This message may contain confidential information. If you are not the intended recipient please inform the sender that you have received the message in error before deleting it. Please do not disclose, copy or distribute information in this e-mail or take any action in relation to its contents. To do so is strictly prohibited and may be unlawful. Thank you for your co-operation.

NHSmMail is the secure email and directory service available for all NHS staff in England and Scotland. NHSmMail is approved for exchanging patient data and other sensitive information with NHSmMail and other accredited email services.

For more information and to find out how you can switch, <https://portal.nhs.net/help/joiningnhsmail>

1 April 2021

Norton Rose Fulbright LLP  
3 More London Riverside  
London SE1 2AQ  
United Kingdom

Tel +44 20 7283 6000  
Fax +44 20 7283 6500  
DX 85 London  
nortonrosefulbright.com

**By email**

The Square  
Temple Quay  
Room 3 O/P  
Temple Quay House, 2  
Bristol BS1 6PN

**Direct line**

[REDACTED]

**Email**

[REDACTED]@nortonrosefulbright.com

**Attention:**

[A27ArundelBypass@planninginspectorate.gov.uk](mailto:A27ArundelBypass@planninginspectorate.gov.uk)

**Your reference**

**Our reference**

SFIT/1001149637

Dear Sirs

## **A27 Arundel Bypass DCO: Scoping Report**

We act for Walberton Parish Council. At Appendix 1 to this letter is a "Table of Comments on EIA Scoping Report". We would be grateful if you could take these into account when issuing your Scoping Opinion. We provide an overview of our commentary on the Scoping Report below.

The Scoping Report ignores the importance of the village communities that the Bypass will pass through, but in particular Walberton and Binsted. Neither Walberton nor Binsted are identified by Highways England as villages, yet at a factual, community, and operational level these villages operate as such. These rural villages with their dispersed farmsteads have ancient origins dating back to before the Norman Conquest with Medieval and Roman remains in evidence. The historic landscape and the principal buildings that punctuate it have changed little over centuries and it is vitally important that the character of these villages is properly understood and the impact of the proposals on these villages fully assessed.

Highways England's approach in the Scoping Report is to assess effects on only limited aspects of the villages, such as a particular residential property within the noise zone, or the visual effects on a particular listed building. This approach fails to assess the cumulative intra-project impacts of the proposals on the villages. This relates to Landscape and Visual, Cultural Heritage, Noise and Air Quality effects as a minimum.

The village of Binsted will be bisected by the bypass, neighbours will be physically cut off from one another and from community events and facilities such as the 12th Century St Mary's Church, or the village Strawberry Fair, and footpath connections are also severed. In Walberton the annual fireworks venue will be lost. The effect on these communities, which operate as cohesive tight-knit communities where neighbours largely all know each other is at a serious risk of being lost; this social aspect of the impact on these communities is all but ignored in the Scoping Report and should be assessed. The Population and Human Health chapter will need particular attention. The effect on these communities should also be assessed cumulatively with other identified effects.

The proposed scope of the Biodiversity chapter omits some important areas of assessment that are referred to in the Appendix.

[PPE-#28891534-v1](#)

Norton Rose Fulbright LLP is a limited liability partnership registered in England and Wales with number OC328697, and is authorised and regulated by the Solicitors Regulation Authority. A list of its members and of the other partners is available at its registered office, 3 More London Riverside, London SE1 2AQ; reference to a partner is to a member or to an employee or consultant with equivalent standing and qualification employed or engaged by Norton Rose Fulbright LLP or any of its affiliates.

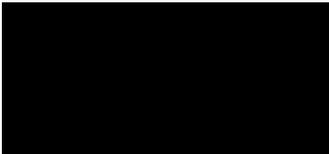
Norton Rose Fulbright LLP, Norton Rose Fulbright Australia, Norton Rose Fulbright Canada LLP, Norton Rose Fulbright South Africa Inc and Norton Rose Fulbright US LLP are separate legal entities and all of them are members of Norton Rose Fulbright Verein, a Swiss verein. Norton Rose Fulbright Verein helps coordinate the activities of the members but does not itself provide legal services to clients. Details of each entity, with certain regulatory information, are available at [nortonrosefulbright.com](http://nortonrosefulbright.com).

1 April 2021

The Scoping Report also contains a number of factual inaccuracies, for example a plan showing Walberton C of E school shows the school where it was located 13 years ago and has since been demolished and rebuilt in a different location. It is also evident that the Scoping Report has been put together perhaps to a large extent relying on a 'map based' approach. Given COVID restrictions in the past 12 months this is to a limited extent understandable, but when the EIA is undertaken it is crucial that Highways England undertake site visits and do proper field based assessment to support its assessment of effects. The importance of a robust assessment cannot be overestimated. Hopefully this will eliminate the factual errors.

We look forward to sight of your Scoping Opinion in due course.

Yours faithfully,



Sarah Fitzpatrick

## Appendix 1

### Walberton Parish Council

#### Table of Comments on EIA Scoping Report

Paragraph Reference	Comment
Chapter 1 - Introduction	
1.2.7	HE have failed to take into account the Walberton Neighbourhood Plan as part of the suite of policy that will be considered by the Secretary of State. The Walberton Neighbourhood Plan is part of the local development plan, adopted March 2017. A revised Neighbourhood Plan is going to referendum on 6 May 2021 and should be taken into account as an emerging policy. There are important policies including those relating to heritage/archaeology in the Neighbourhood Plan which should be considered.
Chapter 3 – Assessment of Alternatives	
	HE have not discussed how the grey route was ultimately chosen and what environmental benefits it has over the alternatives. HE should consider the “Arundel Alternative”, as well as tunnelled and cut and cover solutions for part of the route, particularly where major adverse effects are predicted on receptors, these include effects on heritage e.g. the 12 <sup>th</sup> century St Mary’s Church, Binsted, and effects on communities with the villages of Binsted and Walberton being physically divided by the proposed bypass.
Chapter 6 – Air Quality	
6.8.4	The Scoping Report expressly scopes out emissions of PM2.5 but no detailed reasoning is given. Measurements of air quality regularly incorporate PM2.5 levels and so, without adequate reasoning, these should be assessed as part of the proposed scheme. PM2.5 can have serious effects on health.
6.8.7	HE have not included the Avisford Grange housing development as a receptor for air quality, despite its close proximity to the proposed scheme, existing residents, and large number of future residents.
6.8.8	Previous assessments have failed to identify receptors at Walberton C of E Primary School and 2 pre-school. These should be included in future assessments.
6.8.10	Walberton Recreation Ground is a public park that was not assessed as a sensitive receptor previously. It should be included in future assessments.
6.8.13	HE have failed to take into account non-exhaust emissions, such as those from tyres and brakes. These should be considered as part of the air quality assessment.

Chapter 7 – Cultural Heritage	
7.4	While Highways England (“HE”) incorporate the listed buildings in the area into their scope, they fail to mention the many buildings or structures of character that are listed locally by the local planning authority. There are four locally listed buildings in Binsted. These are the Old Rectory, Grove Lodge, Bramble Barn and the Black Horse Pub. The Old Rectory is 100m from the grey route, the Bramble Barn is less than 200m and the Grove Lodge is approx.. 200m. The Black Horse Pub will lose its serene outlook over the Binsted Rife valley as a result of the proposed scheme. These locally listed buildings, all non-designated heritage assets should be incorporated into HE’s scope. Walberton parish has 39 listed buildings and Slindon has 62 listed, not 6 as shown in the report.
7.4.2	No mention is made of the ancient village of Binsted, which has 9 Grade II listed buildings (8 houses and St Mary’s Church), an archaeological notification area, a Roman Road, Moot Mound, and was vitally important in the life story of Laurie Lee who’s poems were inspired here.
Chapter 8 – Landscape and Visual	
8.4.10	Incorrect reference is made here to Walberton as a settlement, when it is in fact a village.
8.4.18	HE have only referred to “Binsted Wood” when the Binsted Woods Complex local wildlife site includes Binsted Woods and Tortington Common.
8.4.22	HE have noted that Public Right of Way footpath no.350 between Walberton and Binsted crosses the proposed scheme corridor, as does bridleway no.392 to the north-west of Walberton, but it fails to mention that footpath no.341 that connects Binsted Lane to the South Downs National Park is cut off as a consequence of the raising of Binsted Lane.
8.4.39	HE have not included either existing or the future properties as part of the Avisford Grange development.
8.5.5	There is no mention in the scoping report of the change in the Walberton village landscape as a result of the increase in traffic caused by the proposed scheme, despite mention of how the Arundel landscape will change due to decrease in traffic.
8.8.24	The assessment of visual impact during the night-time will use the same study area as the daytime assessment, even though the light emanating from the proposed scheme at night will be further reaching than the visual impact of the proposed scheme during the daytime. A different spatial scope is required.
	No reference is made to the landscape and visual impacts on the Sussex villages in particular, the ancient village of Binsted, or Walberton, as a cumulative impact, rather than the impact on individual views or properties comprised within the villages.
Chapter 9 – Biodiversity	

	HE's Scoping Report fails to grasp the importance of the Binsted Woods Complex to local wildlife. The Complex is a great foraging location and bats can travel up to 15km per night to forage there. HE need to establish the importance of the complex and its surrounds to bats commuting from the wider area to the south and the west as the road will act as a significant barrier and HE need to assess how the bat species in Binsted Woods, that depend on a diet associated with wetland habitats, will access these habitats.
	HE have not considered the numerous rare and declining species of bird and how the noise of the proposed scheme will affect their ability to hear each other call and ability to hear predators.
	HE have failed to include in their scope several priority species, including toads, hares, hedgehogs and harvest mice. These are all declining nationally and are all located within the area of the proposed scheme.
	HE have focussed on each species individually but they have failed to take into account the cumulative impact the scheme will have on the many protected species within the area.
9.7.1	HE have recognised the risk of accidental mortality of barn owls during the operational phase. However, it is known that many species of animals including (but not limited to) badgers, birds, hedgehogs, bats, reptiles, toads and invertebrates are routinely killed by traffic. HE have not scoped these risks into their report, or how they will prevent/mitigate these deaths.
Chapter 10 – Geology and Soils	
10.4.5	Incorrect reference to the route crossing south of Binsted, whereas the route runs through Binsted.
10.4.10	Table 25 includes “Binsted Rife Priory Farm, 50m north of the proposed scheme”. Binsted Rife (a stream that runs along the valley between Binsted and Walberton) is not located on or near Priory Farm. Clarity should be provided as to which location the spray irrigation licence applies to.
Chapter 12 – Noise and Vibration	
12.3.8	HE should consult with Walberton Parish Council when assessing areas that will require an operational phase noise assessment; they have not referred to as consultees in the Scoping Report.
12.4.2	The Scoping Report states that Walberton C of E School is within 600m of the boundary study area. This underplays the effect of the route on Walberton C of E School, which is less than 200m from the grey route. HE are also asked to note the current location on the school, the old school was demolished 13 years ago and is shown incorrectly on HE's plans. See plan below, showing the correct location of the school.

<p>12.4.2</p>	<p>There is a failure to mention residential properties in Fontwell, Slindon, Crossbush and Lyminster when referring to potential sensitive receptors within 600m of the boundary. There is a failure to mention other sensitive receptors. Fields in Binsted are home to rare breed sheep. It is well documented that sustained traffic noise can have detrimental effects on farm and wild animals, and wild birds, resulting in lower growth rates, a deterioration of feed efficiency and other detrimental effect on some biological functions.</p>
<p>Chapter 13 – Population and Human Health</p>	
<p>13.4.4</p>	<p>HE state that the proposed scheme runs south of the village of Binsted, whereas it actually runs through it.</p>
<p>13.4.5</p>	<p>Incorrect reference to Binsted Road being crossed by the scheme, which should read “Binsted Lane”.</p>
<p>13.4.10</p>	<p>Reference that no community facilities are located directly alongside the route is incorrect. HE have failed to refer to Binsted Church and churchyard, which are directly alongside the route.</p>
<p>13.4.11</p>	<p>Reference is made to Binsted Nursery being 200m from the proposed scheme, whereas part of the nursery is within the red line boundary of the proposed scheme.</p>
<p>13.4.12</p>	<p>Reference is made to proposed scheme crossing the boundary of Avisford Park Golf Course, whereas it actually runs through the golf course on both sides of Yapton Lane.</p>
<p>13.5.7</p>	<p>HE recognise the impact that the construction phase will have on the severance of communities but no mention has been made of the operational phase, which also needs to be scoped in. Intra-project effects need to consider that a quiet peaceful countryside area that include historic villages and tight knit communities will become severed by the presence of the A27 bypass and associated viaducts, and will become dominated by the presence of these urbanising features and the lack of quiet and</p>

	peace that once existed. Tunnelled and cut and cover solutions should be considered for the bypass in these locations
13.6.1	Mitigation has been proposed in the form of overbridges on Tortington Lane, Binsted Lane and Yapton Lane. The Binsted Lane overbridge is over 7m high and has an oppressive effect on the houses/community below. The Binsted Lane overbridge does not have sufficient ramps and tie-ins and some fields are consequently made inaccessible. The connectivity needs to be fully assessed before this overbridge can be put forward as a mitigation measure. Tunnelled and cut and cover solutions should be considered for the bypass in these locations.

**Planning Act 2008 (as amended) and The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 – Regulation 10 and 11: Application by Highways England for an Order granting Development Consent for A27 Arundel Bypass – Scoping Request stage**

This document provides comments prepared by officers on behalf of West Sussex County Council (hereafter referred to as WSCC) to the A27 Arundel Bypass Environmental Impact Assessment Scoping Report (February 2021, Document No. HE551523-BAM-EGN-ZZ-RP-LE-0002), requested by the Planning Inspectorate on the 4<sup>th</sup> March 2021 (Reference TR010045-000009).

This response covers comments from WSCC only and does not include comments on behalf of Arun District Council or the South Downs National Park Authority (SDNPA).

The table below provides comment for each Scoping Report chapter relevant to WSCC, with specific paragraph/table/figure references where applicable.

Reference	WSSC Comment
<b>1 Introduction</b>	
1.1.4	WSSC notes that the need for likely areas of land required for mitigation has not been identified yet. Has the Applicant identified a large enough Scoping Area to allow for these areas to be included?
1.2.7	The West Sussex Plan is a non-statutory plan and does not form part of the statutory development plan for the area so should be removed from this list.
<b>2 The Proposed Scheme</b>	
2.2.1	<i>"Helping cyclists, walkers and other vulnerable users of the network"</i> – this would be better phrased "Non-Motorised Users (NMU's) and other vulnerable users of the network so equestrians are considered suitably.
2.2.3	No reference to NMU's and whilst it says users and improving accessibility, WSSC would like to see particular reference due to the clear benefits of improving access and permeability for NMU's.
2.3.4	The paragraph states that the proposed scheme lies outside the SDNP boundary. As the proposed scheme includes detrunking of the existing A27 between Crossbush and Tye Lane, the proposed scheme is partially in the SDNP. The paragraph should be amended accordingly.
2.5.5	Reference to walkers and cyclists is made, but it would be better to refer to these as NMU's so this also incorporates equestrian users. The Bridleway network is heavily severed by this proposal and the existing situation.
2.6.2	As per 2.2.3, the proposed scheme key features should specifically identify connections for NMUs into the wider network of facilities; for example, a new facility between Crossbush and the A284 Lyminster Bypass / FP2205 that will be needed to ensure the scheme connects into the wider network and provides facilities for NMUs. There is reference to de-trunking the existing A27 but no mention of interventions to make this de-trunked road easier to cross for NMU's. The proposed scheme description should be amended to include these facilities.
2.6.10	The proposed scheme does not include a junction at Ford Road. The decision on whether to include this is expected at PCF stage 3, so the Scoping Report does not currently consider the potential worst case impacts of the proposed scheme. The proposed scheme and associated red line boundary should include a junction at Ford Road to ensure that the worst case has been considered.
2.6.11	WSSC expects to see at the PEIR stage a full presentation of the location, dimensions and nature of all temporary construction areas and haul roads, with a full justification for the sizes and locations needed. This must be fed into the topic assessments where required.
<b>General</b>	WSSC would like to understand further the likely construction durations for each element of the proposed scheme. Any assessment must consider reasonable contingency to ensure the assessment of potential impacts is robust (Rochdale Envelope).
<b>3 Assessment of alternatives</b>	
<b>General</b>	WSSC wishes to reiterate the importance of the design process and how the involvement of WSSC and other stakeholders in providing local knowledge, feedback on design development and input to potential opportunities is critical. As well as regular involvement in the Focus Group meetings, WSSC wishes to see a clear presentation of how the Applicant has reached a chosen design to take forward to EIA and DCO application, and how stakeholder feedback and environmental constraints and opportunities have fed into this process. WSSC wish to see the

	<p>footprint of the project minimised as much as possible to avoid environmental impacts to sensitive receptors. Due to the scale of highway improvements, WSCC wish to see the highest standard of design and package of detailed environmental mitigation. This would include extensive landscaping/screening; translocation of soils from Ancient Woodland to create new compensatory habitats; creation of 'green bridges' to maintain connectivity between habitats; extensive noise mitigation; and new facilities for NMUs to integrate the scheme into the wider network of NMU facilities.</p>
<b>4 Consultation</b>	
<b>General</b>	<p>WSCC understands that measures required in response to COVID-19 have consequences for an Applicant's proposed approach and ability to obtain relevant environmental information, including consultation feedback for the purposes of their assessment. As per PINS Advice Note Seven (Version 7, June 2020), WSCC will look to the Applicant to provide suitably flexible approaches, in keeping with government COVID-19 guidelines, to aid the robust collation of information for the purposes of PEIR and ES production.</p>
<b>4.5.2</b>	<p>WSCC should be listed as a relevant planning authority in addition to Arun DC and SDNPA.</p>
<b>5 Environmental Assessment Methodology</b>	
<b>5.4.4 and 5.4.6</b>	<p>WSCC acknowledges and agrees that assessments of the criteria of likely environmental effects are made on the basis of professional judgment. WSCC welcomes, pursuant to Regulation 14 (4) of the 2017 Environmental Impact Assessment (EIA) Regulations, the resultant ES being prepared by competent experts. WSCC expects to see that the PEIR/ES provides a Statement of Competence to this effect.</p>
<b>General</b>	<p>All method statements for surveys, investigations and assessment methodology for relevant topics should be consulted upon and agreed with the relevant stakeholders in good time and discussions held on the COVID-19 restrictions in gaining required data.</p>
<b>General</b>	<p>The EIA should focus on mitigation and compensation to be provided, and this needs to both be clearly presented in the PEIR/ES and measurable, particularly if it is relied on for the purposes of presenting the residual impacts within the assessment.</p>
<b>General</b>	<p>WSCC wishes to see commitments to monitoring in the PEIR/ES where required. It is recognised that monitoring is an important element in the management and verification of the actual proposed impacts. It is understood that the outline management plans, across a number of environmental topics, will be submitted along with the DCO application, a draft list of these should be included in the PEIR, including an OEMP.</p>
<b>Table 7</b>	<p>With regards the ES structure, will the Applicant be including a chapter on consultation, with an appended Consultation Report? WSCC would wish to see how the key findings of consultation have driven forward the proposed scheme design. There is no mention of the Rochdale envelope approach within this chapter or acknowledged it will be included in section 4 of the table.</p>
<b>6 Air Quality</b>	
<b>6.2.7</b>	<p>Reference should be made to '<i>Breathing Better a partnership approach to improving air quality in West Sussex</i>' (May 2018). WSCC and all West Sussex District and Borough Councils are committed to ensuring that the County is a healthy place to live.</p>

<b>6.8.4</b>	Although the baseline data suggests that concentrations of PM <sub>2.5</sub> are within the relevant air quality objective, this does not justify excluding PM <sub>2.5</sub> from the assessment. As emissions of NO <sub>x</sub> and PM <sub>10</sub> are expected to reduce as the vehicle fleet transitions to electric propulsion, in the future PM <sub>2.5</sub> are expected to make up a higher proportion of vehicle emissions and should therefore be assessed. (Fine Particulate Matter in the United Kingdom, Air Quality Expert Group 2012) <a href="https://uk-air.defra.gov.uk">https://uk-air.defra.gov.uk</a>
<b>6.9.1</b>	The approach to identifying specific receptors is accepted but as a list of receptors is not currently available, this should be agreed with the relevant stakeholders including WSCC prior to undertaking the assessment to reduce the risk of the assessment failing to meet the requirements of stakeholders.
<b>Approach to assessment</b>	WSCC is not satisfied with the approach to assessing air quality impacts and requests that an assessment of PM <sub>2.5</sub> is scoped in and the Applicant should commit to agreeing specific receptors prior to undertaking the assessment.
<b>7 Cultural Heritage</b>	
<b>General</b>	Community Information (Archaeology) Action Plan. There is no provision in the Scoping Report for the dissemination of non-technical and intellectually accessible information about the programming and findings of intended archaeological surveys (for the purposes of site assessment and mitigation of impact) to stakeholders and the local community. Such dissemination should take the form of a Community Information (Archaeology) Action Plan (CIAAP), to be referred to in the PEIR/ES with a brief summary of the range of media to be used in order to provide that information, e.g., as part of a project e-newsletter or online blog. This information should be made available from the start of on-site archaeological works, or as soon as practicable thereafter including the just-beginning archaeological monitoring of GI works, and later-this-year intended start of non-intrusive geophysical survey.
<b>General</b>	Historic Environment Record (HER) – there is no provision in the Scoping Report for the feeding of information arising from the archaeological assessments and surveys into WSCC’s HER database. It will be essential to keep this new information flowing into the HER in a non-technical and accessible format, providing GIS shapefiles, so that the HER can be kept up-to-date to inform the next stages of assessment and the Archaeological Evaluation and Mitigation Strategies (7.6.1, 7.8.22). These two Strategies, and the Written Schemes of Investigation arising from them, should make clear how assessment and survey information will be presented accessibly and non-technically, and with readily usable IT, for inclusion in the HER.
<b>7.6.1 – 7.6.2</b>	The proposed Archaeological Mitigation Strategy should include details of the suggested CIAAP referred to above. See also below, 7.8.22.
<b>7.7</b>	In the description of likely significant effects, an additional paragraph is needed (7.7.6) to address mitigation of historic landscape severance impacts; (a) the severance of Binsted as a historical settlement into three parts, isolating its most ancient and historically important building, St Mary’s church, from its historical context, the village which it served; and (b) severance by the road crossing of the community’s view along the Binsted Rife valley, a proximate and very visible feature of the village’s historical landscape in all periods.
<b>7.8.12</b>	The baseline heritage asset setting assessment should also take account of tranquillity, using the tranquillity considerations referred to in Chapter 8 (Landscape and Visual), 8.4.30 and 8.4.31, as a guide.
<b>7.8.12</b>	The baseline heritage asset setting assessment should include relevant photomontages, with special reference to, but not necessarily solely comprising

	identified designated heritage assets within the visual envelope of the scheme, e.g., Scheduled Monuments, Listed Buildings, Registered Parks and Gardens, Conservation Areas.
<b>7.8.12</b>	It may be appropriate in some cases for photomontages prepared for LVIA purposes to be shared for heritage asset setting assessment purposes; but in preparing the ES, care should be taken to identify key photomontages necessary only for heritage asset setting assessment, which should be included in Chapter 7 (Cultural Heritage).
<b>7.8.22</b>	The proposed Archaeological Evaluation Strategy should include reference to the CIAAP, with a brief outline of the range of media to be used in disseminating to stakeholders and the local community the programming and findings of archaeological assessments, surveys and findings.
<b>Approach to assessment</b>	<ul style="list-style-type: none"> <li>• WSCC is satisfied with the general approach to archaeological assessment, the range of desk-based and field assessment techniques to be used.</li> <li>• Work needs to be done to include procedures for disseminating in a non-technical and accessible way to stakeholders and the local community the findings of archaeological assessments and surveys; a CIAAP is suggested for this purpose.</li> <li>• Similarly, procedures to keep the WSCC HER database regularly and accessibly informed of surveys' findings should be included in the ES, in order to ensure that further assessments and mitigation measures can be prepared on a fully informed basis.</li> <li>• There will need in the ES to be a mutually informing approach to LVIA and the baseline heritage asset setting assessment, in order to ensure that photomontages that may be shared by both disciplines, and those necessary solely for heritage asset setting assessment, will be included in the ES.</li> <li>• The Archaeological Evaluation and Mitigation Strategies and WSI arising out of the ES should include procedures to inform stakeholders and the local community of assessment and survey findings, and "next steps", and for streamlining of information to keep the HER database up to date as the project work proceeds.</li> </ul>
<b>8 Landscape and Visual Amenity</b>	
<b>Arboriculture</b>	
<b>General</b>	Whilst arboriculture is intrinsic to landscape and biodiversity as well as other topics like cultural heritage, it should have a stand-alone chapter. This would acknowledge the importance of the discipline and present arboricultural considerations and issues clearly in one place. It is proposed to have the AIA and AMS as appendices to the ES, so it makes sense to have a separate arboricultural chapter.
<b>8.1.4 8.4.41 8.8.29</b>	<b>All refer to BS5837:2012</b> – whilst this is the industry standard, there are limitations when applying a generic approach to calculating root protection areas (RPAs). Of necessity, there is no allowance for other important variables such as species, soil quality and depth and hydrology which have profound influence on RPAs. BS5837:2012 makes clear that RPAs are indicative of the <i>'minimum area around a tree deemed to contain sufficient roots and rooting volume to maintain a tree's viability, and where the protection of roots and soil structure is treated as a priority.'</i> The RPA is often seen as the <u>maximum</u> area with construction occurring at the RPA boundary or incursions made into the RPA. Category C trees should not be discounted automatically, <i>'impaired condition'</i> may well provide diverse biodiversity benefits. Their collective value may be important.

8.3.7	The arboricultural study area is stated (currently) to be within 100m of the proposed scheme. Given that in favourable conditions, roots can extend well beyond any calculated RPA, consider enlarging the study area, particularly if the road alignment changes. It is unclear whether the study area includes the likely land take/construction corridor of the proposed scheme or is it 100m in addition to it. The Scoping Report should clarify this point.
8.6.6	As with ancient woodland, no amount of replacement planting can compensate for the loss of veteran/ancient trees, which are habitats themselves, sometimes hosts to unique assemblages of organisms. It is imperative that any tree/hedgerow removal is minimised and justified. As detailed design progresses, unavoidable losses will become evident but within this document there are several references to avoiding losses and mitigation being 'wherever practicable' and 'wherever possible.' Calculating arboricultural value should be undertaken using an agreed assessment tool such as CAVAT or i-Tree.
8.6.7	The mitigation as described should be applied to hedgerows; restoration and rejuvenation of lower quality hedgerows is perfectly feasible and should be prioritised where connectivity is compromised.
8.9.6	Hedgerows receive scant mention within the Scoping Report. Those that are not 'important' under the Regulations should not be discounted. It may be possible to restore and improve these in terms of structure and species variety, contributing to enhanced landscape connectivity.
Approach to assessment	Subject to the addition of the agreed assessment tool, the general approach to assessing the arboricultural resource is satisfactory. The potential for tree, woodland and hedgerow loss is significant, so a stand-alone arboriculture chapter would provide clarity instead of this being a subordinate part of the landscape and visual chapter. Detailed assessment of this substantial resource is required to assess the impact of the proposed scheme.
<b>LVIA</b>	
8.2	The planning context set-out has omitted to refer to the West Sussex Transport Plan 2011-2026, which does have some relevance to landscape matters. The document (along with its associated Strategic Environmental Assessment) sets out WSCC strategic objectives to protect and enhance heritage and landscape character, as well as indirectly-related objectives such as enhancements to the cycle and pedestrian network. This should form part of the baseline context for considering the potential landscape and visual effects of the proposed scheme.
8.2.1	Given the development is largely outside SDNP, paragraph 1.154 of NNNPS is particularly relevant to this scheme and should be specifically referenced as it is a key aspect of the policy context for assessing landscape and visual impacts.
8.3	It is noted and accepted that that para 8.3.1 states that the landscape study area should be " <i>proportionate to the proposed scheme boundary, the wider landscape setting, potential visibility and the full extent of the setting of adjacent landscape receptors</i> ". That 'proportionate' approach need not necessarily mean extending the area of search over a wide geographical area, as suggested in the bullet points at para 8.3.4. Whilst that wide geographical area may be appropriate for considering potential visual effects, it may be less appropriate in considering certain landscape elements and qualities which would have interactions with the proposed scheme at a more local scale. The need to carry out specific and more detailed surveys of landscape elements, qualities, functions and character at a local scale (building-upon any information gained from published Landscape Character Assessments) is set-out

	at paragraphs 5.13 – 5.16 of GLVIA3, by the Landscape Institute and the IEMA. Nevertheless, the approach described at 8.3.6, allowing for refinement of the study area following discussions with the local planning authority and other stakeholders, is supported.
<b>8.4</b>	The accounts of baseline conditions e.g., ‘Landforms and Hydrology’ are all reasonably factual (at a high level). However, it is not clear what relevance they have to the purpose of a Scoping Report, unless they are intended to show how the study area has been informed. If that is the case, this has not been stated.
<b>8.4.33</b>	WSCC supports the proposal for the landscape assessment to include consideration of landscape (and townscape) character at a local level, <i>“to provide an additional level of detail to the geographic areas identified by the published landscape character areas”</i> .
<b>8.3.35 – 8.4.39</b>	Although some suggestion of viewpoint locations is often made in Scoping Reports, we acknowledge and accept 8.9.3 and 8.9.4 stating that the Scoping Report is a <i>“high level review”</i> , and that <i>“a more detailed desk-based study will be undertaken along with detailed fieldwork during the winter”</i> , following which <i>“the proposed study area and landscape and visual receptors will be presented to the local planning authority and other stakeholders to seek agreement on the scope of the assessment”</i> . In refining the scope of the visual assessment, sequential visual experiences should be taken into account where required, rather than just assessing a view from a single viewpoint, i.e., a receptor may be moving through the landscape on a footpath, lane, railway etc., and it is more appropriate to group the visual effects they would experience rather than assessing them individually as if the receptor were stationary. In recognition of the proposed route’s proximity to dwellings, and in accordance with normal LVIA practice, the visual assessment should also consider the potential effects on private views from dwellings. Should potentially significant effects be identified, it may then be considered appropriate to undertake a separate Residential Visual Amenity Assessment, considering the Landscape Institute’s Technical Guidance Note 2/19.
<b>Table 9 Visual Receptors</b>	This section refers to ‘residents’ but should also include reference to future residents. Reference is made to the Avisford Grange development which is currently being built out to the east of Tye Lane. It is suggested that the reference is changed to ‘residents of current and planned development’. We would suggest that the ‘Visitors’ receptor type should also take into account additional ‘groups’ of visitors to Arundel generally, and to the WWT Arundel Wetland Centre. In addition, it should be noted that the group of ‘Users of PRoW across the study area’ will also include people on horseback, whose additional height may have implications for experiencing visual effects associated with the proposed scheme. This additional height associated with Bridleway users should be taken into account in the visual assessment. Educational facilities are not covered by the categories currently listed but should be included as they are included in other topics such as air quality, noise and vibration.
<b>8.4.40</b>	Although it is understandable that the visual assessment <i>“will not consider views from parts of recreational routes that may be closed during the construction phase or re-routed in the operational phase”</i> , it will nevertheless be important to take into account the baseline scenic value of a landscape, broadly considering all views that contribute to the overall baseline situation and consider if the proposed scheme may cause changes to those scenic qualities. As set-out in GLVIA3 at para. 5.28, landscape value may take into account scenic value, which is <i>“the term used to</i>

	<p><i>describe landscape that appeal primarily to the senses (primarily but not wholly the visual senses)”, alongside judgements regarding sense of place within the landscape, and it’s aesthetic and perceptual qualities.</i></p>
<b>8.5.2 – 8.5.3</b>	<p>In addition to the listed likely impacts from the construction phase, the following should also be considered likely, and relevant to the assessment of landscape and visual effects:-</p> <ul style="list-style-type: none"> <li>• Loss of Ecosystems services, including severance of Green Infrastructure; and</li> <li>• Severance of Public Rights of Way (and accordingly erosion of access/loss of public amenity).</li> </ul> <p>Some of the effects may be felt at some distance (particularly the visual effects, and that of the night sky), and as-such the description of “localised” effects is potentially misleading.</p>
<b>8.5.5</b>	<p>Some of the potential impacts associated with the construction phase would also apply to the operational phase, such as changes to surface landform, loss of vegetation, severance of the Green Infrastructure network, loss of Ecosystems services and severance of the PRoW network. As well as the noted likely impact on Arundel’s townscape character, including tranquillity, a further potential likely impact on the landscape character of the rural environment around Arundel should also be assessed.</p>
<b>8.5.8 – 8.5.9</b>	<p>Whilst it is proposed that the assessment will consider operation phase year 1 in winter conditions (when visibility is greatest), the assessment of operation phase year 15 will be in summer conditions (when vegetation is in leaf, and therefore most effective at screening the proposed highway infrastructure and traffic). Assessing year 1 in the winter, but year 15 in the summer lacks logic, means the two assessments would not be comparable and would not offer an assessment of the worst case. WSCC request that the operational phases in year 1 and year 15 to be assessed in both winter and summer conditions to allow for a robust assessment to be presented.</p>
<b>8.7.1</b>	<p>The description of the likely significant effects should remove the word ‘local’, since the reach of the potential effects cannot be fully appreciated prior to assessment work being undertaken.</p>
<b>8.8.5</b>	<p>The production of photomontages in accordance with the Landscape Institute’s <i>Technical Note 06/19: Visualisation of Development Proposals, 2019</i> is supported. However, this particular Technical Note should be read alongside others, namely:-</p> <ul style="list-style-type: none"> <li>• Visualisation of development – glossary (7/19)</li> <li>• Camera auto-settings (8/19)</li> <li>• Earth curvature (9/19)</li> </ul> <p>Other LI Technical Information notes, and Technical Guidance may be relevant to considering the potential landscape and visual effects of the proposed scheme, namely:</p> <ul style="list-style-type: none"> <li>• Residential Visual Amenity Assessment (2/19)</li> <li>• Landscape Character Reading List (5/15)</li> <li>• Landscape Character Assessment (8/15)</li> <li>• Ecosystem Services (2/16)</li> <li>• Tranquillity (1/17)</li> <li>• Digital realities (10/19)</li> </ul> <p>In agreeing locations for photomontages for the purposes of LVIA, the proposed integrated approach to environmental mitigation should take full account of photomontages which may be desirable or essential for the purposes of baseline</p>

	heritage asset setting assessment (7.8.12 above), though in some cases not essential for LVIA. In those circumstances photomontages necessary for heritage asset setting assessment should not be deleted because of their lesser value for LVIA.
<b>8.8.8 Table 10</b>	The criteria for determining landscape value should consider more than those suggested, which are based on various designated statuses of landscapes. Determining landscape value should also take into account value which can be attributed to individual elements, features and aesthetic or perceptual dimensions, in accordance with GLVIA3 para. 5.20.
<b>8.8.9 Table 11</b>	The criteria for determining landscape susceptibility (N.B. para 8.8.9 of the Scoping Report erroneously refers to ‘visual susceptibility’) should consider more than those suggested, which only refers to a landscape’s ability “to accommodate change” (i.e., considering the landscape in its own-right). Determining landscape susceptibility should also consider the extent to which a proposed development may or may not compromise the ability for planning policy and strategies to be met. This best practice methodology follows GLVIA3, para. 5.40 which sets out that judgements on a landscape receptor’s susceptibility to change should consider whether a landscape receptor could potentially accommodate the proposed development “ <i>without undue consequences for... the achievement of landscape planning policies and strategies</i> ”.
<b>Tables 13, 17 and 18.</b>	Table 13 sets out criteria for ascribing ‘beneficial’ impacts as well as ‘adverse’ impacts, whereas Table 17, the equivalent criteria for ascribing magnitudes of visual effect, does not differentiate between ‘beneficial’ and ‘adverse’. Furthermore, Table 18 (Landscape and Visual significance of effects matrix) does not differentiate between ‘beneficial’ and ‘adverse’. The proposed scheme may have some beneficial visual effects, for instance, the de-trunking of the existing A27 and a significant reduction in traffic. The study should also consider these possible positive changes (with respect to both landscape and visual effects), in order to present a balanced assessment.
<b>8.8.25</b>	It is assumed that the criteria described would be applicable to considering the magnitude of effect, alongside that set-out within Tables 13 and 17. Whilst this is acceptable in principle, the methodology is not explained.
<b>8.8.26</b>	It is not accepted that receptors outside of the SDNP should be ‘scoped out’ of the assessment of night-time visual effects. Although these receptor locations are outside of the designated ‘Dark Sky’ landscape, night-time effects nevertheless still have the potential to be significant and adverse, and accordingly should be given proper consideration in the LVIA.
<b>General</b>	Subject to addition of a year 1 summer and year 15 winter assessment, the LVIA approach set-out appears to be relatively standard, and is broadly acceptable, particularly taking into account the proposed collaborative approach which would ensure further engagement of local planning authorities and stakeholders in ‘Focus Groups’. This should allow the scope to be appropriately refined in a way that responds to new evidence as it becomes available.
<b>9 Biodiversity</b>	
<b>General</b>	The landscape and environment led approach with landscape, biodiversity, hydrology & cultural heritage considered together in an integrated Environmental Masterplan is welcomed by WSCC. Habitat severance, with impacts on a range of species including bats, hazel dormice and water voles, is of major concern. Thus, the landscape scale approach to designing this road is also welcomed. Given the potential for significant adverse impacts on ecology, the proposed scheme will

	require a comprehensive package of mitigation, compensation & enhancement measures. These will need to be detailed in the ES, as will commitment to delivering a Habitat Management Plan to ensure appropriate long-term management of habitats, green bridges and other features created. As the proposed scheme includes de-trunking of the existing A27, opportunities to enhance north-south habitat connectivity across this section should be explored. This might, for example, involve creating wildlife corridors to assist the movement of bats, hazel dormice and other species between Binsted Wood and Rewell Wood. Without such measures the proposed scheme would make Binsted Wood very isolated from the surrounding landscape. The ES should demonstrate that all opportunities have been taken to provide ecological enhancement. It is recommended that a full Biodiversity Net Gain (BNG) Assessment is undertaken as proposed in The Environmental Assessment Report, Appendix 8-25 (Highways England, 2019).
<b>9.4.4</b>	Fairmile Bottom is both an SSSI and a Local Nature Reserve (LNR). Thus, there is one LNR within 2km of the proposed scheme.
<b>9.4.6</b>	All areas of ancient woodland, regardless of whether they lie within designated sites, will require detailed ecological assessment.
<b>9.4.7 &amp; Table 20</b>	The criteria for ascribing the level of importance to different habitats is unclear. Table 20 has a heading 'Ancient woodland, veteran trees & Habitats of Principal Importance (Referred to as Presumably Priority in Section 9.4.7). As Habitats of Principal Importance (or Priority Habitats) as listed under Section 41 of The NERC Act (2006), it is of concern that some are ascribed only Local Importance in Table 20 and without any justification. E.g., Deciduous woodland and wet woodland are both Habitats of Principal Importance yet ascribed Local Importance if not within a Local Wildlife Site (LWS). Traditional orchard is ascribed County Importance in Table 20 yet are Habitats of Principal Importance. Hedgerows are ascribed County Importance (when meeting LWS criteria), otherwise only Local Importance. Some of these hedgerows may be of at least County importance, and potentially even greater when one considers their importance in terms of habitat connectivity within the landscape (as bat and dormouse corridors). The Environmental Assessment Report (Highways England, 2019) considered all hedgerows to be of County importance (as a Habitat of Principal Importance). Table 20 affords only Local Importance to ponds, yet nationally, like hedgerows, they are a Habitat of Principal Importance.
<b>Table 21</b>	Other Notable Mammals: Harvest mouse: The Study Area is ascribed Local importance for harvest mouse. The basis for this is not clear. This species is often under-recorded and given the network of ditches, hedgerows and woodland edge habitats there could be potential for a population of County importance.
<b>9.4.11</b>	The proposal to conduct an updated desk study, to include data from The Sussex Biodiversity Record Centre, MAVES and other sources, and in particular to map the records is welcomed.
<b>9.4.12</b>	The Scope of Additional Ecological Surveys are presented in Table 22 (not Table 17, as mentioned).
<b>Table 22</b>	This table helpfully identifies the scope of additional ecological surveys. However, it is not clear what ecological surveys have already been conducted. It would have been helpful to present a summary of surveys already undertaken and their results.
<b>9.4.12</b>	No additional surveys are proposed for harvest mouse. This species is often overlooked. Given the network of ditches, hedgerows and woodland edge habitats

	there could be suitable habitats within the Study Area which might warrant surveys. Any decisions not to survey a particular species, such as this, should be justified.
<b>9.4.12</b>	The Arun Valley floodplain south of Arundel, including the grasslands and network of ditches, is possibly under-recorded and likely to require detailed ecological survey and assessment.
<b>9.6</b>	<b>Design, Mitigation &amp; Enhancement Measures:</b> Little has been said about Post-construction Ecological Monitoring and Long-term Habitat Management. Both of these are key to the success of any package of mitigation, compensation and enhancement measures. Section 9.8.6 makes some reference to monitoring to inform future management. To increase confidence in the success of the mitigation, compensation and enhancement measures, WSCC would expect the Applicant to make a commitment, such as: A post-construction monitoring programme would be carried out during the first five years after construction (the initial maintenance period) to assess establishment of the ecological mitigation measures, help inform future management and, if necessary, allow for the implementation of remedial measures. Furthermore, the ES should include a Habitat Management Plan/Ecology Aftercare Plan.
<b>9.6</b>	<b>Design, Mitigation &amp; Enhancement Measures:</b> Consideration should also be given to the creation of new wildflower grasslands on the new verges of the route in appropriate locations within the list of measures for reducing or offsetting effects on important ecological features. These might be established on nutrient-poor subsoil as being implemented by Highways England elsewhere in the country.
<b>9.6.2</b>	<b>Design, Mitigation &amp; Enhancement Measures:</b> Regarding the potential measures outlined in bullet point 3, the design of the road crossing the Arun floodplain, including the River Arun itself, will also need to ensure that it does not create a barrier for wildlife movement. This will need to be supported by sufficient assessment in the ES.
<b>9.6.2 – 9.6.3</b>	Biodiversity offsetting and enhancement, e.g. new ponds, drainage, new tree planting, replacement habitat such as replacement badger setts, may involve ground excavations which may have an impact upon buried archaeological features and deposits, known or presently unknown. The ES should take account of these potential cross-cutting impacts within the relevant chapters.
<b>10 Geology and Soils</b>	
<b>10.2.1</b>	WSCC suggest the following documents are included as there are references to minerals and waste and aspects covered in these documents in this section, as well as the subsequent sections: <ul style="list-style-type: none"> <li>• West Sussex Joint Minerals Local Plan 2018 (Ref 17);</li> <li>• West Sussex Waste Local Plan 2014 (Ref 16);</li> <li>• Review of the West Sussex Waste Local Plan 2014 (May 2019) (Ref 155);</li> <li>• West Sussex Waste Local Plan. Minerals and Waste Safeguarding Guidance (Ref 156).</li> </ul> The Soft Sand Review of the West Sussex Joint Minerals Local Plan has been completed and WSCC and SDNPA are programmed to Adopt the Soft Sand Review, as formal changes to the JMLP, with effect from 25 <sup>th</sup> March 2021.
<b>10.4.23</b>	The Scoping Boundary is also within the Sharp Sand Resource Consultation Area: <a href="https://www.westsussex.gov.uk/media/13437/mw_safeguarding_guidance.pdf">https://www.westsussex.gov.uk/media/13437/mw_safeguarding_guidance.pdf</a> This will require consultation with WSCC.
<b>10.8.14 – 10.8.15</b>	The Impact Assessment should be informed by the findings of geoarchaeological monitoring of GI works and by geoarchaeological and palaeoenvironmental desk-

	based assessment (ref. Chapter 7, Cultural Heritage, 7.8.21). Geoarchaeological Desk-Based Assessment may indicate potential non-designated sites of geological interest.
<b>Table 26</b>	This does not appear to include all industrial/commercial uses in the study area, such as the two businesses on Arundel Road to the west of Fordingbridge plc that are vehicle repair and car body shop businesses.
<b>11 Material Assets and Waste</b>	
<b>11.4.19</b>	In terms of inert landfill capacity, reference is made to the 295,000 tonnes that is recorded in the Waste Data Interrogator. However, this is not an accurate reflection of the 'capacity' for inert disposal to land. There is a list of further 'recovery' projects in the WSCC Annual Monitoring Reports where inert material would/could go.
<b>11.4.20 and Table 35</b>	There is a metal recycling site c1km to the west of the proposed scheme that appears to be missing. WSCC are happy to provide further details of the minerals and waste sites in the area through the development of the baseline.
<b>11.6.2 1<sup>st</sup> bullet</b>	The first bullet point includes the wording " <i>securing and using materials that already exist on site or can be sourced from other projects</i> ". Opportunities should be explored to source materials from projects within the local area (within the county ideally), rather than from national projects to reduce the impact of transportation to site.
<b>11.6.2 2nd bullet</b>	The second bullet includes the wording " <i>maximising the use of renewable materials</i> ". A material can be renewable, but still not necessarily being renewed in a sustainable manner, with negative wider environmental or societal impacts. This needs to be considered, and wider sourcing policies considered and applied when selecting materials. The wording also includes: " <i>design for materials optimisation</i> ". This principle should be extended to the whole life cost of the materials selected, reflecting maintenance requirements, and carbon impacts.
<b>11.8.5</b>	It is noted and reflected in the Scoping Report that some of the route falls within the safeguarded areas for sharp sand and gravel. Therefore, consideration of the potential sterilisation of the resource is needed. The EIA needs to consider the sterilisation of mineral resources not just safeguarded sites, which the Scoping Report seems to focus on more than the whole resource. There is only a passing reference in 11.6.2 as to the use of materials that already exist on site and Table 35 refers to likely sterilisation of material, but states that further assessment is required. Table 36 recognises that this could be a large effect but appears to be only related to a safeguarded mineral site rather than the mineral resource. The Scoping Report mentions the safeguarding guidance, Policy M9 of the JMLP and the sharp sand and gravel MSA. However, it does not mention or consider what the JMLP seeks when assessing potential mineral sterilisation. The Scoping Report states that the Applicant will consider whether minerals will be sterilised but does not expand to the fact that sterilisation can be avoided by prior extraction. Prior extraction is a consideration and it is suggested that this is included in the EIA work as it progresses.
<b>Table 34</b>	The table lists the types of materials that may arise from the construction. Consideration should be given whether this needs to be further broken down and assigning whole value/potential of the waste generated.
<b>Table 36</b>	Material recovered but simply left to long term stockpiling should not contribute to the overall assessment of significance. Only materials that are recovered and reused within the construction window of the project should be material.

<b>Approach to assessment</b>	The approach to waste appears to be considered in isolation of the other impacts of the proposed scheme. Materials should be selected that reflect all aspects of the project's impacts, not solely waste reduction.
<b>Summary</b>	WSCC support the recognition of Minerals and Waste Plans, and relevant safeguards through those plans, that will require consideration going forward. Further work is recognised and that would need to be addressed as work is progressed. It is recognised in the Scoping Report that potential mineral sterilisation could be a large effect moving forward. As set out above, further work should be done to consider the guidance and that sterilisation of mineral resources can be avoided by prior extraction.
<b>12 Noise and Vibration</b>	
<b>12.3.4</b>	In line with DMRB LA 11, the Scoping Report should outline how areas for construction phase assessment will be agreed with stakeholders. The approach suggested to consider consultation responses and discussions with stakeholders seems a little vague. It is suggested that this is considered by the relevant topic group and a specific question is included in statutory consultation survey to identify locations for assessment.
<b>12.3.6</b>	Typo should refer to A284.
<b>12.3.8</b>	The process for agreeing locations for noise assessment needs to be consistent with paragraph 12.3.6. SDNPA should be listed as a relevant stakeholder.
<b>12.5.4</b>	The proposed scheme is also expected to change traffic flows on parallel routes including parts of A29 and A259. These impacts at NSRs along these routes should also be taken into account.
<b>12.6.3</b>	Mitigation measures to be agreed with the relevant statutory bodies. It is not clear who the statutory bodies are for noise and what the process will be for agreeing mitigation measures. The statutory bodies will want to consider the evidence of impacts and formally respond during the consultation on options so cannot be expected to agree these measures in advance. It is suggested that the Applicant make efforts to agree these measures with statutory bodies, who should also be specifically identified.
<b>Table 37</b>	Please specify that the weekend assessment includes all day Sundays as they are not currently mentioned in the time of day categories.
<b>12.7.1</b>	The number of affected properties should be based upon latest survey information (including potential new housing developments), rather than those identified in the EAR, Chapter 11 (Ref 169).
<b>12.8.2</b>	Unless there is commitment that significant sources of construction vibration have been designed out of the scheme, we would expect to see this included as a realistic worst case as part of the EIA and assessed as such.
<b>13 Population and Human Health</b>	
<b>General</b>	WSCC expects to see reference to West Sussex Joint Health and Wellbeing Strategy (2019-2024). This document sets out the vision of the Health and Wellbeing Board, its goals and the ways in which it will work to improve the health and wellbeing for all residents in West Sussex.
<b>13.2.2</b>	Please specify which neighbourhood plans are considered to be relevant. This should include Walberton Neighbourhood Plan, along with the Arundel Neighbourhood Plan, as it has a more up-to-date document which was 'Made' January 2020. Ford Neighbourhood Plan was also 'Made' January 2019 and Walberton Neighbourhood Plan passed Examination March 2021. It should also be noted they are part of the Development Plan for the area so specific policies may

	need to be referenced in various sections of the EIA, for consideration as work progresses.
<b>13.4.1</b>	WSCC planning applications should also be investigated to establish baseline conditions.
<b>13.4.13</b>	Libraries are key community facilities. WSCC suggests Arundel library could be included in this list.
<b>13.4.18</b>	There is reference to a study into the levels of use of the PROW impacted. This will not necessarily be a fair reflection on desirability as use may currently be negatively impacted by the severance caused by the existing A27 alignment and the lack of safe crossing points.
<b>13.5.5</b>	Walkers, cyclists and horse-riders are also road users so could be impacted by potential disruption to public highways in addition to Public Rights of Way.
<b>13.5.7</b>	Under potential impacts it is suggested that reference to the impact on blue light response times be referenced and considered as the EIA progresses, not just ' <i>access to healthcare</i> '.
<b>13.5.10</b>	Title refers to horse riding but no reference to equestrians in the paragraph. Due to the reasons set out in the WSCC response, equestrians need to be considered carefully. As for reference to impacts on journey length and severance these should be kept to an absolute minimum and all efforts should be made to reduce the negative impact on public path users where possible.
<b>13.5.11</b>	Potential impacts upon human health determinants during operation should also cross reference to potential visual impacts to receptors, as well as potential changes in noise and air quality.
<b>13.6</b>	There appears to be interventions detailed to accommodate the existing PROW network, but there are various footpaths that appear to be accommodated that may benefit from enhancement and upgrade to Bridleways, improving the accessibility of the local network.
<b>13.6.4</b>	There is also potential to improve walking cycling and horse-riding provision by connecting the scheme to the wider network of facilities for these users through improvements such as a shared path to connect the scheme to A284 Lyminster Bypass and FP2205, and along Ford Road to Arundel and Ford. These schemes are needed to meet the Government's ambition to improve sustainable transport provision in this area (as outlined in RIS1). Failing to include these connections within the scope of the EIA will mean that a potential worst case assessment has not been undertaken.
<b>Approach to assessment</b>	WSCC is satisfied with the general approach to assessing population impacts and the proposed scoping out of the health impacts listed. Light pollution and odour should also be taken into consideration as health impacts especially during construction and air quality should be included as a key performance area given that ' <i>The proposed scheme is identified as one of three schemes which aim to address congestion, delays to roads users, community separation, air pollution and the number of accidents along the existing A27</i> '.
<b>General</b>	Reference should be made to Environmental Impact Assessment: Appraising Access (The Institute of Public Rights of Way and Access Management, November 2020).
<b>14 Road Drainage and the Water Environment</b>	
<b>14.2</b>	WSCC refers the Applicant to 'West Sussex LLFA Policy for the Management of Surface Water' (November 2018). Also, of relevance is the West Sussex Local Flood Risk Management Strategy (2013 – 2018).

<b>15 Climate</b>	
<b>Table 58</b>	Table 58 needs updating to include the sixth carbon budget. The supporting text in para 15.8.8 will also need amending.
<b>Approach to Climate</b>	WSCC is satisfied with the general approach outlined in the climate assessment section. We would encourage that the landscape scale approach also applies to any carbon offsetting and sequestration measures.
<b>Appendix C</b>	
	This long list will need regular updating as work on the EIA progresses, including all planned development including the new school referenced in policy INF SP2 of the Arun Local Plan and the Arun District Council <u>Secondary School Site Selection Study</u> . If not already, it is suggested that Permitted Development is included once 'Prior Notification' is received. The list does not include WSCC Waste Local Plan site allocations and application/approvals for minerals, waste and WSCC developments.
	The list of sites in Appendix C does not include an up to date list of planning consents in Chichester District. In some cases, Local Plan allocations (west of Chichester, Tangmere, Shopwhyke) are included but the associated applications/consents at these sites are not separately listed. This could lead to them being omitted from core scenario forecasting, as allocation sites where an application is not imminent or current or consented are included in the "reasonably foreseeable" category for uncertainty analysis rather than "more than likely" for applications or "near certain" for consents.
	Adur and Worthing a similar situation is apparent for New Monks Farm, where the allocation is included but the planning consent is not. The application for 249 dwellings at Withy Patch G&T site and the employment at Shoreham Airport, both served off the same roundabout access as New Monks were included.
	The list of sites for the emerging Horsham Local Plan does not constitute the final preferred strategy of the District Council but their option list, so it will include some sites which will not be allocated. These sites are best treated as speculative until Horsham's Local Plan reaches submission stage.
	WSCC refers the Applicant to the Planning Inspectorate website for other NSIPs. WSCC notes Rampion 2 Offshore Wind Farm is in the pre-application phase and has the potential to cross the proposed scheme in one of the cable route alignment options.
<b>General comments</b>	
<b>General</b>	Due to the sensitivity of the local environment, delivering major highway improvements in this area will require the highest standard of design, including environmental mitigation. Therefore, through scheme development and a thorough and robust EIA process, WSCC expects to see a detailed and high quality design and package of mitigation measures presented to reduce the impacts on the environment and affected communities. WSCC will expect consultation on the evidence of socioeconomic benefits through the development of the proposed scheme.