

# **M25 junction 28 improvement scheme**

## **TR010029**

### **6.3 Environmental Statement**

#### **Appendix 1.1: Scoping opinion responses**

APFP Regulation 5(2)(a)  
Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



## **Infrastructure Planning**

### **Planning Act 2008**

### **The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009**

### **M25 junction 28 scheme Development Consent Order 202[x ]**

---

#### **6.3 ENVIRONMENTAL STATEMENT APPENDIX 1.1: SCOPING OPINION RESPONSES**

---

<b>Regulation Number:</b>	Regulation 5(2)(a)
<b>Planning Inspectorate Scheme Reference:</b>	TR010029
<b>Application Document Reference:</b>	TR010029/APP/6.3
<b>Author:</b>	M25 junction 28 improvement scheme project team, Highways England

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
1	May 2020	Application issue

# Table of contents

Chapter	Pages
<b>Table of contents</b>	<b>3</b>
<b>1. Planning Inspectorate's comments</b>	<b>5</b>
<b>2. Other respondent comments</b>	<b>50</b>

## Tables

Table 1.1: PINS scoping opinion general comments	5
Table 1.2: PINS scoping opinion air quality comments	19
Table 1.3: PINS scoping opinion air quality comments	21
Table 1.4: PINS scoping opinion noise and vibration comments	22
Table 1.5: PINS scoping opinion noise and vibration comments	23
Table 1.6: PINS scoping opinion biodiversity comments	24
Table 1.7: PINS scoping opinion biodiversity comments	25
Table 1.8: PINS scoping opinion water environment comments	27
Table 1.9: PINS scoping opinion water environment comments	29
Table 1.10: PINS scoping opinion landscape comments	31
Table 1.11: PINS scoping opinion landscape comments	33
Table 1.12: PINS scoping opinion geology and soils comments	34
Table 1.13: PINS scoping opinion geology and soils comments	36
Table 1.14: PINS scoping opinion cultural heritage comments	37
Table 1.15: PINS scoping opinion cultural heritage comments	39
Table 1.16: PINS scoping opinion materials and waste comments	40
Table 1.17: PINS scoping opinion materials and waste comments	41
Table 1.18: PINS scoping opinion people and communities comments	43
Table 1.19: PINS scoping opinion people and communities comments	44
Table 1.20: PINS scoping opinion climate change comments	45
Table 1.21: PINS scoping opinion climate change comments	46
Table 1.22: PINS scoping opinion cumulative effects comments	48
Table 1.23: PINS scoping opinion cumulative effects comments	48
Table 2.1: Scoping opinion comments – Anglian Water Service Ltd	50
Table 2.2: Scoping opinion comments – Chelmsford City Council	52
Table 2.3: Scoping opinion comments – ESP Utilities Group Ltd	52
Table 2.4: Scoping opinion comments – Essex County Council	52
Table 2.5: Scoping opinion comments – Health and Safety Executive	63
Table 2.6: Scoping opinion comments – Historic England	65
Table 2.7: Scoping opinion comments – London Borough of Havering	65
Table 2.8: Scoping opinion comments – National Grid	74
Table 2.9: Scoping opinion comments – Public Health England	81
Table 2.10: Scoping opinion comments – Royal Mail	92
Table 2.11: Scoping opinion comments – Environment Agency	95
Table 2.12: Scoping opinion comments – London Borough of Bexley	98



# **Appendix 1.1**

## **Scoping opinion responses**

# 1. Planning Inspectorate's comments

**Table 1.1: PINS scoping opinion general comments**

PINS reference paragraph	Topic	Inspectorates comment	Response
2.3.1	Description of development	Section 2.5 of the Scoping Report provides a brief description of the main components of the Proposed Development. 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.	The ES includes a detailed description of the proposed development (Chapter 2).
2.3.2	Description of development	The length of the scheme (in km) and the size of the proposed DCO application site (in hectares) are not given in the Scoping Report and this information must be specified in the ES. Details of other components such as signage, gantries, lighting, drainage features, and environmental mitigation features have not been specified in the Scoping Report and this information should also be provided in the ES.	The size of the Scheme is stated in section 2.4 (Scheme description) of the ES and the Development consent order (application document TR010029/APP/3.1). Details of other components of the Scheme are stated in section 2.4 and throughout the ES where relevant. A full Scheme description is also included in the Introduction to the application (application document TR010029/APP/1.1).
2.3.3	Description of development	The text in Table 1.1 directs the reader to Appendix A of the Scoping Report for information regarding land use during construction; however, the figures in the appendix do not illustrate temporary and permanent land-take. The ES should clearly identify the land that would be required temporarily during construction (eg the location of construction compounds, material stockpiles, borrow pits, and haul roads), as well as the land that would be required for the operational phase. The proposed DCO boundary applied for must allow for the land-	Section 2.4 (Scheme description) of the ES includes details of land use during construction and operation, including temporary and permanent land take for all proposed works. The DCO boundary allows for all elements of the works.

PINS reference paragraph	Topic	Inspectorates comment	Response
		take associated with all works and project elements proposed as part of the application, including requisite demolition works, drainage features, and mitigation areas.	
2.3.4	Description of development	The Inspectorate notes that the Preliminary DCO Boundary shown on Figure A-2 of the Scoping Report extends approximately 2km south of Junction 28 along the M25. It is not clear from the description in the Scoping Report if permanent works or temporary activities (eg traffic management measures associated with the construction phase) are proposed within this area. Similarly, the Preliminary DCO Boundary extends around an existing overhead electricity transmission line (identified on Figure A-2 of the Scoping Report) but any works in this location are not explained in the Scoping Report.	<p>The DCO has been developed since scoping stage and is shown on Figure 1.1.</p> <p>The boundary extends 2 km south of junction 28 for the inclusion of new signage on the gantries. However, the gantries will not be removed.</p> <p>The boundary extends around the motorway communications cabinet to the north of the Scheme to allow for any changes to the transmission line if required.</p>
2.3.5	Description of development	Where flexibility is sought, the ES should set out the parameters that would apply for all components of the Proposed Development, where applicable setting out clearly any proposed limits of deviation. This should include the footprint and heights of structures and permanent earthworks such as embankments (taking account of existing ground levels), as well as land-use requirements for all phases and elements of the development. The description should be supported by appropriate figures/drawings which should be clearly and appropriately referenced in the ES. Further advice on flexibility is provided below.	The footprint of the Scheme, heights of structures and proposed limits of deviation for both construction and operation are included in the Development consent order (application document TR010029/APP/3.1) for the Scheme. Figures showing these are detailed in the Figures documents of the ES and in other DCO figures.

PINS reference paragraph	Topic	Inspectorates comment	Response
2.3.6	Description of development	The ES should describe any anticipated phased approach to construction, including the likely duration and location of construction activities. The Inspectorate notes the information in paragraph 2.5.7 of the Scoping Report regarding the anticipated year of construction and operation and would expect this to be incorporated consistently into the ES, in particular where construction year, opening year, and design year assessment scenarios are presented. Construction traffic routing and anticipated numbers/types of vehicle movements (for example to move excavated material noting the volume estimated in paragraph 2.5.6 of the Scoping Report) should be described, with sufficient detail to enable a robust assessment in the ES.	Details of construction activities are included in Chapter 2 of the ES which references other documents where necessary to provide further information.
2.3.7	Description of development	The ES should include a description of the nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) to be used during construction. The ES should describe and assess the impacts associated with any particular technologies or substances proposed to be used for the construction phase.	These descriptions are included within the ES as far as can be determined at the preliminary design stage.
2.3.8	Description of development	The Scoping Report provides a brief description of the location of the Proposed Development, and an overview of footways and other non-motorised routes in the vicinity. The Inspectorate would expect a section in the ES which summarises the site and surroundings, to provide the context of the Proposed Development. The ES should provide a detailed description of the existing land uses and features across the land to which the proposed	These descriptions are provided in section 2.4 for the ES and within the ES topic chapters (Chapters 5 to 15).

PINS reference paragraph	Topic	Inspectorates comment	Response
		DCO application relates and surrounding area, and this information should be applied to the relevant aspect assessments where relevant.	
2.3.9	Description of development	The Scoping Report and the accompanying environmental constraints plan (Figure A-1, Appendix A of the Scoping Report) identify a number of landscape, historic, ecological, and other features in the vicinity of the Proposed Development. These features are not individually identified or referenced and it would provide greater clarity and assist future consultation to do so. The figures presented in the ES should be prepared accordingly.	The Environmental Constraints Plan (Figure 2.1) has been updated to include names of landscapes, ecological, roads and features as identified in section 2.4 of the ES. Figures showing the location of features relevant to each topic are provided in the ES.
2.3.10	Alternatives	The Inspectorate would expect to see a discrete section in the ES that provides details of the alternatives considered and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects.	An 'Assessment of Alternatives' section is included in the ES (Chapter 3), detailing the history of the alternative options and the assessment of them and how the Applicant has arrived at the preferred option.
2.3.11	Alternatives	The Inspectorate would expect to see a discrete section in the ES that provides details of the alternatives considered and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects.	An Assessment of alternatives section is included in the ES (Chapter 3), which details the reasoning behind the selection of the chosen option and comparisons of environmental effects.
2.3.12	Alternatives	Chapter 3 of the Scoping Report ('Alternatives') sets out the approach taken in developing options for the Proposed Development. This chapter provides an overview of the options and the reasoning behind the chosen option. Paragraph 3.2.6 refers to an environmental assessment of the options undertaken to inform the decision, however no details of this assessment are provided. The ES	An 'Assessment of Alternatives' section is included in the ES (Chapter 3), which details the assessment of environmental effects on the options. Details of stakeholder responses are also provided.



PINS reference paragraph	Topic	Inspectorates comment	Response
		should include this information not least so that it can be understood how environmental effects, and the responses of stakeholders, have been taken into account in the choices made	
2.3.14	Flexibility	The Proposed Development parameters will need to be consistently and clearly defined in both the draft DCO (dDCO) and in the accompanying ES. At the time of application, any Proposed Development parameters should not be so wide-ranging as to effectively represent different developments. 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.	The Proposed Development has been designed to give certainty on what is proposed as far as is possible at this stage so there should be no question over there being potentially different developments. The scheme is described in Chapter 2 of the ES with further detail given in the Introduction to the application and Scheme description. The Scheme includes defined vertical and horizontal Limits of Deviation which set the parameters for the development.
3.1.3	EIA approach	Where relevant, the ES should provide reference to how the delivery of measures proposed to prevent/minimise adverse effects is secured through DCO requirements (or other suitably robust methods) and whether relevant consultees agree on the adequacy of the measures proposed.	Mitigation measures are provided in each topic chapter in the ES (sub-section 9 of each chapter) and outlined in REAC (application document TR010029/APP/7.3).
3.2.2	National Policy Statements	The designated NPS relevant to the highways sector is the National Policy Statement for National Networks (NPSNN). The Inspectorate notes that this is identified in Table 1.2 of the Scoping Report as a key consideration, and advises that the EIA takes account of this policy document.	The ES references the National Policy Statement for National Networks in section 1.7 (Legislative and policy framework) and within the relevant Legislative and policy framework sections of each chapter.

PINS reference paragraph	Topic	Inspectorates comment	Response
3.3.1	Scope of assessments	<p>The Inspectorate recommends that in order to assist the decision-making process, the Applicant uses tables:</p> <ul style="list-style-type: none"> <li>a. to demonstrate how the assessment has taken account of this Opinion;</li> <li>b. to identify and collate the residual effects after mitigation for each of the specialist aspect chapters, including the relevant interrelationships and cumulative effects;</li> <li>c. to set out the proposed mitigation and/or monitoring measures including cross-reference to the means of securing such measures (eg a dDCO requirement); and</li> <li>d. to describe any remedial measures that are identified as being necessary following monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>a. This is included in Appendix 1.1 of the ES (this document).</li> <li>b. This is included in each topic chapter (Chapter 5-15) in the ES and provided in the Summary chapter (Chapter 16) of the ES.</li> <li>c. Details of this is included in each topic chapter (Chapter 5-15) in the ES.</li> <li>d. Details of this is included in each topic chapter (Chapter 5-15) in the ES and identified in the Outline Construction Environmental Management Plan (CEMP) (application document TR010029/APP/7.2).</li> </ul>
3.3.2	Scope of assessments	<p>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, for example through 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.</p>	<p>The Scheme does not include associated development.</p>

PINS reference paragraph	Topic	Inspectorates comment	Response
3,3,3	Scope of assessments	The Inspectorate notes that it is proposed in Chapter 4 to assess impact to human health in the Air Quality, Noise, Road Drainage and Water Environment, and People and Communities aspect areas. The Inspectorate has had regard to the information provided in the Scoping Report and has taken into account the nature and characteristics of the Proposed Development and is generally content with this approach. The Inspectorate agrees with points raised by the Health and Safety Executive that impacts to human likely to result from proposals relating to existing infrastructure must be assessed in the ES. The assessment should have particular regard to the existing railway, overhead electricity line, the historic landfill site north west of the Junction, and the gas pipelines shown on Figures A-1 and A-3 of the Scoping Report.	Impacts to human health have been assessed in the relevant topics chapters and the People and Communities chapter (Chapter 13) of the ES.
3.3.4	Scope of assessments	The Inspectorate also recognises that the existing infrastructure presents a challenging constraint to the design of the Proposed Development and potentially to the powers required in the dDCO and therefore on the information on which the EIA will be based. The Inspectorate advises that interactions between the Proposed Development and existing infrastructure assessed are fully explained and assessed in the ES. The LBH have raised points in this regard in their response in Appendix 2 of this Scoping Opinion.	Chapter 2 of the ES and the Introduction to the application describes the Scheme proposals.
3.3.5	Scope of assessments	While the structure of the ES remains for the Applicant to decide, the information that would be expected to appear in a Transport chapter must be	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which assesses the

PINS reference paragraph	Topic	Inspectorates comment	Response
		provided in the ES. The Inspectorate notes that a Transport chapter is not included in the draft structure of the ES presented in the Scoping Report. LBH and Essex County Council (ECC) have noted the absence of information regarding anticipated traffic levels. The Inspectorate considers that the ES must clearly explain where the information gathered as part of the traffic assessment (including traffic modelling and baseline transport information) is applied to other aspect assessments within the ES, for example Air Quality, Noise and Vibration, and People and Communities.	impact of the proposed M25 junction 28 improvement scheme on the strategic and local highway network, road safety and local sustainable methods of transport.
3.3.6	Scope of assessments	The ES should assess the impacts from proposed construction traffic management measures including any road closures or diversions. Royal Mail Group Ltd have provided comments in this regard along with information on their operations in the area which could have a bearing on this assessment.	Chapter 2 of the ES describes the construction information provided by the buildability contractor for the Scheme.
3.3.7	Scope of assessments	The approach to the EIA is outlined in Chapter 4 of the Scoping Report, and paragraph 4.6.1 states that decommissioning effects are not considered relevant to the Proposed Development. Paragraph 2.5.9 of the Scoping Report states that the Proposed Development will have an indefinite design life and also states that decommissioning will not be included in the ES. The Inspectorate considers that this is a reasonable approach taking into account the specific characteristics of the Proposed Development as a whole. However, the Inspectorate considers that any decommissioning	Comment is duly noted. The nature of the proposal is such that decommissioning is not anticipated and this is noted in the ES in Chapter 2.

PINS reference paragraph	Topic	Inspectorates comment	Response
		associated with dismantling and replacing particular elements of the Proposed Development once they reach the end of their design life should be assessed where significant effects are likely to occur.	
3.3.8	Scope of assessments	Notwithstanding the comments above regarding decommissioning, the Applicant should ensure that any potential significant effects from any demolition or removal of existing structures to enable the Proposed Development are assessed within the ES.	The nature of the proposal is such that decommissioning is not anticipated and this is noted in the ES in Chapter 2.
3.3.9	Scope of assessments	It is noted from the Scoping Report that an assessment under the Habitats and Species Regulations 2017 is unlikely to be required. The Inspectorate considers that an up to date HRA screening report should be produced (the Inspectorate notes the assessment referred to in Chapter 4) and should be referenced in the ES. The HRA report should in turn contain references to where the information on which it is based can be found in the ES.	An HRA report has been produced (application document TR010029/APP/6.9).
3.3.10	Scope of assessments	Throughout the Scoping Report, reference is made to 'the Scheme,' 'the project', 'the construction site', 'the red line boundary', and 'the Site'. Some of these terms appear to be used interchangeably. This is of particular relevance to understanding the study areas applied and how the relevant baseline information has been captured, and therefore understanding the basis of the assessments of the likely significant effects of the Proposed Development. The ES should apply terminology	Consistency has been applied to the ES when referring to the Scheme as 'the Scheme' throughout.



PINS reference paragraph	Topic	Inspectorates comment	Response
		used carefully in order to preserve the distinction between terms and aid clarity.	
3.3.11	Baseline Scenario	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.	Each environmental topic chapter of the ES (Chapter 5 to 15) includes a section on the baseline conditions of the environment for their topic.
3.3.12	Baseline Scenario	The Inspectorate notes the information within section 4.6 of the Scoping Report which sets out the temporal scope of the assessments. Key terminology including 'do-minimum scenario' and 'do-something scenario' is introduced, however only the 'do-minimum' is defined. Reference is made to the use of baseline year and future baseline years of assessment but exact scenarios are not committed to in the Scoping Report. The final approach adopted should be defined in the ES and based on the most up to date anticipated project timescales. The approach must be adopted consistently across each aspect chapter of the ES. Where any individual aspect assessments depart from that approach it should be explained in the ES.	This has been detailed in the ES in section 4.8.
3.3.13	Forecasting methods or evidence	The ES should contain the timescales upon which the surveys which underpin the aspect assessments have been based. For clarity, this information should be provided either in the introductory chapters of the ES (with confirmation	Timescales of when surveys have been conducted are included in the relevant chapters of the ES.

PINS reference paragraph	Topic	Inspectorates comment	Response
		that these timescales apply to all chapters), or in each aspect chapter.	
3.3.14	Forecasting methods or evidence	The methodology set out in section 4.5 of the Scoping Report is noted. The Inspectorate expects the ES to include a chapter setting out the overarching methodology for the EIA, which clearly states which effects are 'significant' and 'non-significant' for the purposes of the EIA. Any departure from that methodology should be described in individual aspect assessment chapters.	Chapter 4 (Environmental assessment methodology) of the ES sets out the EIA process, detailing the structure of the ES chapters and the process of assessing the significance of effects.
3.3.15	Forecasting methods or evidence	The Inspectorate recommends that the Applicant fully describes and justifies in the ES the methodologies they have used for the assessments, in particular where these depart from standard guidance or where no standard guidance exists. The Inspectorate considers that the ES should present the specific assessment methodology relevant to each individual aspect/matter assessed. If an overarching methodology is applied this should be explained with relevant cross reference, and any departures from the prescribed methodology should be explained and justified. It would also be of benefit to provide figures in the ES that show the extent of the study areas used for the assessments and identify the receptors. The Inspectorate considers that relevant survey data which inform the assessments should be appended to the ES.	The ES methodologies are described in each topic chapter in the ES (Chapters 5-15). Figures showing the extent of the study areas are also provided for each topic where relevant.

PINS reference paragraph	Topic	Inspectorates comment	Response
3.3.16	Forecasting methods or evidence	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.	Chapter 4, section 4.16 (Dealing with uncertainty) outlines how the assessment has dealt with uncertainties and this is also described in the topic chapters.
3.3.17	Residues and emissions	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.	These estimates are included in the relevant ES chapters as far as can be determined at this stage.
3.3.18	Residues and emissions	The Inspectorate notes the proposal at paragraph 4.12 of the Scoping Report to scope out heat and radiation according to the Applicant's conclusion that they are not relevant due to the characteristics of the proposed scheme. The Inspectorate has taken into account the nature and characteristics of the Proposed Development and agrees that significant effects resulting from heat and radiation are unlikely to arise and therefore agrees that this aspect may be scoped out.	Comment is duly noted.
3.3.19	Mitigation	Any mitigation relied upon for the purposes of the assessment should be explained in detail within the ES. The predicted significance of effects both prior to and following the implementation of proposed mitigation measures should be identified. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. The ES	Mitigation measures required to mitigate the adverse impacts of construction of Scheme are provided in the ES and in the Outline CEMP (application document TR010029/APP/7.2) and the Register of Environmental Actions and Commitments (REAC) (application document TR010029/APP/7.3).

PINS reference paragraph	Topic	Inspectorates comment	Response
		should also address how any mitigation proposed is secured ideally with reference to specific DCO requirements or other legally binding agreements.	
3.3.20	Vulnerability of the development to risks of major accidents and / or disasters	The ES should include a description of the potential vulnerability of the Proposed Development to risks of major accidents and/or disasters, including the vulnerability to climate change, which are relevant to the Proposed Development. Relevant information available and obtained through risk assessments pursuant to European Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided that the requirements of this Directive are met. 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.	The ES includes a description of the potential vulnerability of the Scheme to risks of major accidents and/or disasters (Chapter 4), including vulnerability to climate change (Chapter 14).
3.3.21	Vulnerability of the development to risks of major accidents and / or disasters	The Inspectorate notes that it is proposed in Chapter 4 Section 4.13 of the Scoping Report not to provide a separate chapter in the ES on major accidents and disasters but that major events will be reported in relevant aspect chapters. It is noted that there is a commitment to assess the vulnerability of the Proposed Development to major accidents and disasters, and how such events could change the predicted environmental effects. The Scoping Report does not address the potential for the Proposed Development to lead to or	The ES includes a description of the potential vulnerability of the Scheme to risks of major accidents and/or disasters (Chapter 4).

PINS reference paragraph	Topic	Inspectorates comment	Response
		exacerbate major accidents or disasters. If the Proposed Development could lead to or exacerbate a major accident or disaster this must be assessed in the ES. The Inspectorate notes the proximity of the Proposed Development to existing railway, overhead electricity line, and a high-pressure gas main infrastructure which may be a relevant consideration. The ES should assess these impacts within relevant aspect chapters.	
3.3.22	Transboundary effects	Schedule 4 part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an ES. The Inspectorate notes that the Applicant has indicated in the Scoping Report that the Proposed Development is unlikely to have significant impacts on another European Economic Area (EEA) State.	Due to the nature of the proposal it is not considered that significant transboundary effects will arise. Details are provided in Chapter 4 of the ES (section 4.17).
3.3.23	Transboundary effects	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.	Due to the nature of the proposal it is not considered that significant transboundary effects will arise.
3.3.24	Transboundary effects	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 impacts and if so, what these are and which EEA States would be affected.	Due to the nature of the proposal it is not considered that significant transboundary effects will arise.



PINS reference paragraph	Topic	Inspectorates comment	Response
3.3.25	A reference list	A reference list detailing the sources used for the descriptions and assessments must be included in the ES. The Inspectorate notes the inclusion of a reference list in Chapter 18 of the Scoping Report organised by chapter and welcomes this approach.	Reference have been included as footnotes in each topic chapter in the ES.
3.4.1	Confidential information	In some circumstances it will be appropriate for information to be kept confidential. In particular, this may relate to information about 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. Where documents are intended to remain confidential the Applicant should provide these as separate paper and electronic 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 2014.	Badger sett locations and Annex I and Schedule 1 bird species territory locations have been kept separate to the main ES and will remain confidential.

**Table 1.2: PINS scoping opinion air quality comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
5.4.4	Pollutants	The Scoping Report states that national assessments have demonstrated that there is no risk of exceedance of the air quality objectives set	Noted.

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
		for 1,3-butadiene, benzene, carbon monoxide, lead or sulphur dioxide due to traffic emissions anywhere in the UK, and therefore no further assessment is intended. The Inspectorate agrees with the reasoning in the Scoping Report that significant effects associated with these pollutants are unlikely and is content for further assessment to be scoped out of the ES.	
5.4.4	Pollutants	The Scoping Report does not state if/how impacts resulting from increased PM <sub>2.5</sub> emissions will be taken into account. The Inspectorate considers that the ES should include an assessment of impacts associated with increased PM <sub>2.5</sub> resulting from the Proposed Development. In determining significance, the assessment should take into account performance against relevant target/limit values	PM <sub>2.5</sub> is included within the baseline conditions section of the ES Air Quality chapter. Consideration is given to the potential impact of the Proposed Development on PM <sub>2.5</sub> concentrations in Section 5.1 of Appendix 5.1.
5.4.5	Ecological receptors	It is noted that only internationally and nationally designated sites are identified as sensitive receptors. The Applicant should additionally assess locally and nondesignated sites that could be significantly affected by the Proposed Development. The Inspectorate recommends that the relevant ecological receptors to be included in the assessment should be agreed with NE and the local planning authorities.	Both, London Borough of Havering and Brentwood Borough Council, local authorities were consulted regarding receptors to include within the air quality assessment for the ES. The sensitive receptors included in the air quality assessment are presented in Figure 5.1 of the ES.  There are no nationally or internationally designated ecological sites within the air quality study area, i.e. within 200 m of an affected road.  Areas of ancient woodland close to the Scheme are included within the qualitative assessment for potential impacts from construction dust and are shown on Figure 5.2 of the ES.

**Table 1.3: PINS scoping opinion air quality comments**

Scoping report reference	Other points	Inspectorates comment	Response
5.2.1 and 5.2.2	Study area	‘Construction site area’ – the meaning of this term is unclear. The study area applied to the construction dust assessment must be clearly described in the ES. The study area should be appropriate with regards to the extent of the DCO. With respect to the assessment of construction traffic and operational traffic emissions, the ARN for the local and regional assessments must be clearly defined in the ES. ECC has provided advice regarding the roads to be included in the transport assessment which should be given regard with respect to the assessment of air quality effects.	<p>The study areas for the construction, and local and regional operational assessments are clearly defined in Section 5.4 of the ES.</p> <p>Study areas are shown graphically in Figure 5.1 and Figure 5.2 of the ES for the operational local air quality and construction dust assessments respectively. Assessment of construction traffic has been scoped out as construction traffic flows are unlikely to exceed the thresholds for air quality assessment.</p> <p>The study area for the regional air quality assessment includes all roads in the traffic model provided for the assessment.</p>
Figure B-1	Monitoring locations	The Scoping Report refers to a number of monitoring locations which are not depicted on the accompanying figure as stated. The ES must include a description of each monitoring location and depict them on a clearly legible figure(s). The LBH has provided information in their consultation response on monitoring locations along the A12 which could be used to inform the assessment. The Applicant should make effort to agree monitoring locations with consultees.	<p>Consultation with the local authorities was undertaken to ensure that the latest air quality monitoring results for both London Borough of Havering and Brentwood Borough Council were included within the ES.</p> <p>Air quality monitoring data from continuous monitoring stations and passive diffusion tubes within and close to the air quality study area are presented in Figure 5.1 of the ES.</p>
5.7.5	Significance of construction dust effects	It is unclear how the significance of effects will be determined. In the absence of appropriate guidance, such as exists for local air quality effects in the form of IAN 174/13, this should be assessed using an evidence-based methodology, and described in the ES. The Applicant should seek agreement with the Local Planning Authorities on	The Design Manual for Roads and Bridges Volume 11, Section 2, Part 5, HA 205/08 paragraph 2.9 notes that significance of effect should be assigned after consideration of the effectiveness of the design and committed mitigation measures, i.e. significance is assigned with mitigation in place allowing for the positive contribution of all mitigation that is

Scoping report reference	Other points	Inspectorates comment	Response
		the methodology for determining significance of effects.	deliverable and committed. There is therefore unlikely to be a significant effect on air quality arising from the construction of the Scheme as any effects would be temporary and suitably minimised by the application of standard mitigation measures. This is further documented in Section 5.9 of the ES.

**Table 1.4: PINS scoping opinion noise and vibration comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
Table 17.1	Noise and Vibration	The proposed approach to the assessment of noise and vibration in the Scoping Report does not specifically address how and when vibration impacts will be assessed. The ES should include an assessment of vibration impacts where such impacts may result in significant effects. The assessment should address impacts that derive from construction and operational activities.	The ES includes an assessment of vibration impacts.
6.7	BS5228:2009+A1:2014	The Applicant states that the BS5228 methodology will be applied but does not state which of the Annex E assessment methods will be adopted. This should be agreed with relevant consultees and the information should be provided in the ES.	The ES states the method of assessment for the construction assessment.

**Table 1.5: PINS scoping opinion noise and vibration comments**

Scoping report reference	Other points	Inspectorates comment	Response
6.3.11 and 6.3.12	The Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL)	LOAEL and SOAEL should be defined for all of the construction and operational noise and vibration parameters assessed. Mitigation measures should be set out accordingly.	LOAEL and SOAEL are defined in the ES for construction and operation. Mitigation measures are also detailed in the ES.
6.4.10	Noise survey	Noise surveys should be undertaken to a recognised standard e.g. BS7445-1:2003 and monitoring locations should be agreed with the relevant local planning authority. Survey results should be reported as part of the assessment in the ES.	Noise surveys have been undertaken in accordance with BS7445-1:2003 and monitoring locations were agreed with the local authorities. Survey results have been reported in the ES.
6.6.4.	Detailed noise modelling	The Applicant should set out the noise modelling software and all modelling assumptions within their ES.	Noise modelling software and all modelling assumptions are reported in the ES.
6.10.2 and 6.10.5	Mitigation	The Scoping Report indicates that new roadside noise barriers or extension of existing noise barriers may be required as mitigation against increased noise levels during construction and operational phases. The ES should explain the location(s) where noise barriers will be installed as well as the dimensions of any proposed barriers or extensions to existing barriers where these are considered necessary.	Noise barriers are not required for the scheme.



**Table 1.6: PINS scoping opinion biodiversity comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
Table 7.5	Internationally designated statutory sites (SAC, SPA, Ramsar)	No internationally designated sites have been found within the study area. Given this, and the nature of the Proposed Development there appears to be limited potential for significant effects. However no information is provided in the Scoping Report regarding the nearest designated sites and particularly the presence of any hydrological linkages to the Proposed Development. The ES should present this information and justification as to why no significant effects could occur. Without this information the Inspectorate cannot agree to scope these designations out of the assessment.	The ES presents information on internationally designated statutory sites (SAC, SPA, Ramsar) within the zone of influence of the Scheme. A Habitats Regulations Assessment Scoping exercise has been undertaken (application document TR)10029/APP/6.9). This document is referred to within the Chapter 7 Biodiversity of the ES, and will be submitted along with the ES. No internationally designated sites are taken through the ES assessment as no potential impacts are identified.
Table 7.5	Nationally designated statutory sites (SSSI, NNR)	The Applicant states that the Proposed Development will not affect nationally designated sites as none exist within 2km of 'the Scheme'. The Inspectorate notes that there may be sites just outside this distance which could experience impacts from the Proposed Development, and sites within and without 2km which could be subject to indirect effects, for example, resulting from hydrological changes or air quality changes. The Inspectorate does not consider there to be sufficient justification in the Scoping Report for excluding significant effects, and advises that impacts on Nationally designated sites must be assessed in the ES.	Chapter 7 Biodiversity of the ES explains and justifies the zone of influence of the Scheme in alignment with current guidance and good practice and considered whether any nationally designated sites fall within this zone. No nationally designated sites are taken through the assessment as no potential impacts are identified.
Table 7.5	Locally designated statutory sites	The Applicant states that the Proposed Development will not affect LNRs as there are no LNRs subject to direct land take or immediately	The Manor LNR, located approximately 300 m from the DCO boundary as is included in Chapter 7 Biodiversity of the ES.

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
		adjacent to the development. The Inspectorate considers that indirect impacts on The Manor LNR located 400m west of the development should be assessed, along with any other relevant locally designated statutory sites and does not agree to scope this out of the assessment.	
Table 8.3	Potential impacts	The Inspectorate notes that an assessment of required floodplain compensation is likely due to the loss of existing floodplain storage. The ES should assess the impacts associated with the floodplain compensation proposals.	Chapter 7 Biodiversity of the ES assesses the impacts associated with the floodplain compensation proposals on biodiversity resources in terms of construction and the opportunities this presents for habitat creation.
7.5 and 7.7.5	Potential impacts	High level information is presented in the Scoping Report about potential mortality or injury during construction. The risk of mortality or injury to protected/notable species during operation, for example badger and barn owl, is not mentioned and the Inspectorate considers that this should be assessed in the ES.	The risk of mortality or injury to relevant protected/priority species during operation of the Scheme is assessed in Chapter 7 Biodiversity of the ES.

**Table 1.7: PINS scoping opinion biodiversity comments**

Scoping report reference	Other points	Inspectorates comment	Response
7.10	Potential mitigation measures	The Inspectorate recommends that any proposed mitigation and monitoring measures are agreed as far as possible with relevant consultees including NE and the local planning authorities. The ES should detail all proposed mitigation measures and demonstrate how they will be secured. The Inspectorate notes and supports the commitment to	Proposed mitigation and monitoring measures will agreed as far as possible with relevant consultees including NE and the local planning authorities. Monitoring required for species licensing will be agreed with NE in draft licence applications.

Scoping report reference	Other points	Inspectorates comment	Response
		the principles of 'No Net Loss and Net Gain' with regard to ecological compensation and enhancement. ECC have provided advice in their consultation response in Appendix 2 of this Opinion.	Current legislation does not require NSIP projects such as this Scheme to provide net gain or no net loss. There would unavoidable permanent loss of land as a result of construction, including the loss of veteran trees. However, the Scheme has been designed to maximise opportunities for biodiversity through appropriate re-planting following construction and the inclusion of a long term landscape and ecology management plan. ECC have been consulted on the initial proposals and will be consulted on the outline management plan.
7.11.1-7.11.2	Field Surveys	The Scoping Report states that the Extended Phase 1 Habitat Surveys were undertaken from "safely accessible land adjacent to the highway network" and that the ecological surveys may have been limited by factors which could reduce their effectiveness. The Applicant should ensure that they have a comprehensive set of ecological surveys sufficient to inform the assessment. Where access or other limitations are encountered, these should be detailed within the ES along with an explanation of how these have been addressed and any remaining implications. The Applicant is referred to the powers available under section 53 of the Planning Act in regard to access for the purpose of surveys.	Chapter 7 Biodiversity of the ES is based on the most comprehensive survey information available, and all limitations to survey work is addressed so that a sufficient assessment of the impacts is carried out. Where limitations to access (including health and safety reasons) cannot be overcome then professional judgement has been applied to make accurate assumptions of the biodiversity value of a feature and potential for impacts based on knowledge of the features present and similar schemes. The implications of such assumptions is set out in the ES.
7.5.8 to 7.5.11	Protected species licensing	The ES should confirm whether any EPS licenses and/or mitigation licenses for other protected species would be required. If so, assurance should be provided to the ExA that the necessary license(s) are likely to be obtained. The Applicant	The ES Chapter 7 Biodiversity confirms whether protected species licences are required. Based on survey information to date, the only licence required is in relation to great crested newts. A draft licence will be prepared and LoNI will be sought from NE.

Scoping report reference	Other points	Inspectorates comment	Response
		should seek to obtain letters of no impediment (LoNI) from Natural England. These should be appended to the ES. The Applicant is referred to the Inspectorate's Advice Note 11, Annex C.	

**Table 1.8: PINS scoping opinion water environment comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
8.4.9	WFD designated lakes	The Applicant has identified no WFD designated lakes within the study area and therefore proposes to scope this matter out from the assessment. The Inspectorate is content that no impacts to WFD designated lakes are anticipated, subject to adequate justification in the ES in particular regarding the adequacy of the study area. The study area must be determined by the extent of the potential impacts.	The study area has been justified in the ES (Chapter 8, section 8.4) and is based on industry guidance (DMRB), with reference to potential impacts from a road scheme – i.e. a 1 km buffer around the scheme. There are no WFD lakes within the study area.
8.4.10	'Hydraulically isolated ponds'	It is not clear from the Scoping Report how these ponds are isolated from surface water run-off. Changes in surface water run-off in terms of quantity and quality within the catchment of these ponds may be introduced by the Proposed Development and it is not explained how this has been considered. In the absence of this information the Inspectorate cannot agree to scope this matter out.	Potential impacts to ponds have been considered in the Biodiversity chapter (Chapter 7 of the ES). As they are not connected by watercourses, they are not anticipated to be affected through the water environment. Rather the source of potential impact i.e surface water runoff has been assessed and confirms no significant impact.
8.4.13	Source Protection Zones (SPZ)	No Source Protection Zones (SPZ) are identified by the Applicant as being located within the study area and therefore the Applicant proposes to scope this	The study has been justified in the ES (Chapter 8, section 8.4) and is based on industry guidance (DMRB), with reference to the potential impacts from

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
		matter out of the assessment. The Inspectorate is content that no significant effects could occur, subject to adequate justification in the ES in particular around the adequacy of the study area. The study area must be adequate to capture the extent of potential impacts.	the road scheme, as above. There are no SPZs within this area.
8.4.20	Statutory designated sites	The Applicant proposes to scope out an assessment of impacts on statutory designated sites resulting from changes in the hydrological regime. The Applicant states that they will not consider designated sites further in the context of water resources. The points made above (Table 4.3, ID 1-3) are relevant here and the Inspectorate would expect cross reference between the relevant aspect chapters of the ES in providing justification as to why no likely significant effects are anticipated on statutory designated sites.	No statutory designated sites are downstream and within 1 km of the drainage outfalls. Therefore, in line with industry guidance these have not been considered in the context of water quality.
8.6.1 and Table 8.3	Floodplain compensation	The Applicant indicates that an assessment of floodplain compensation is likely to be required due to loss of natural floodplain storage from the Proposed Development, and an analysis of this will form the basis of a detailed FRA. As with the ecology assessment, any impacts associated with delivery of the floodplain compensation should be assessed within the ES with appropriate cross reference (e.g. any impacts on river flow and freshwater ecology).	The impacts of delivering floodplain compensation are assessed within the ES Chapter 8, referencing the analysis reported in the ES. All potential impacts have been assessed as appropriate, for example impacts on quality of agricultural land within the compensation area. The impacts will be addressed within the relevant sections of the ES with appropriate cross reference.
8.6.1, Table 8.3, 8.7.4	Groundwater	The Applicant states that they do not yet know if discharges to ground will be required and the suitability of any method to do so, but that an	The proposed method of discharge is to surface watercourses. As such, no groundwater assessment



Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
		assessment of potential pollution impacts from any runoff to groundwater may be required. Any impacts associated with discharges to groundwater should be assessed for likely significant effects as part of the ES.	has been undertaken in the context of road runoff to ground.
8.7.5	Flood Risk Assessment (FRA)	The Inspectorate stresses the need for early discussions with the EA and other relevant statutory consultees regarding the scope of the FRA. Where the FRA has been used to inform the assessment in the ES, this should be clearly set out with cross referencing where appropriate to avoid duplication of information.	The Environment Agency have been consulted regarding the assessment of the potential impacts on flood risk. The FRA (application document TR010029/APP/6.6) is the basis for the assessment in the ES and is cross referenced from it.

**Table 1.9: PINS scoping opinion water environment comments**

Scoping report reference	Other points	Inspectorates comment	Response
8.2.1	Study area	The study area should be clarified in the ES with the water quality and flood risk areas clearly set out, supported by figures where appropriate. The study area must be adequate to capture the extent of potential impacts, both direct and indirect. The study areas should be agreed with the relevant consultees including the EA and the local planning authorities, and justified in the ES.	The study has been justified in the ES (Chapter 8, section 8.4) and is based on industry guidance (DMRB), with reference to potential impacts from the scheme, as stated above.
8.4.5	Baseline conditions	The Scoping Report acknowledges that desk study data is limited. The Applicant should engage with consultees in order to obtain information that will inform a robust baseline for the assessment. The Applicant's attention is drawn to information in	Consultation with regulators (principally the Environment Agency and Lead Local Flood Authorities – ECC and Havering London Borough in this case) has been undertaken throughout the design process to ensure that the Scheme has been

Scoping report reference	Other points	Inspectorates comment	Response
		ECC's response regarding surface water flood risk areas.	designed to be compliant with the objectives of the WFD and that feasible opportunities for improvements to the water environment have been integrated into the Scheme.
8.4.21, 8.7.3, 8.12.3, Table 8.4	Methodology strategy	In relation to the requirements of the WFD, and in accordance with the NPSNN, the Applicant should have regard to the current relevant River Basin Management Plan (RBMP), in this case the Thames RBMP, when determining whether the Proposed Development has the potential to impact upon any WFD waterbodies. The Inspectorate supports the preparation of a separate WFD assessment, which clearly explains how the requirements of the WFD have been met. This should be prepared in consultation with the EA. The Applicant's attention is drawn to the Inspectorate's advice note 18 on the WFD.	A separate WFD assessment (application document TR010029/APP/6.7) has been prepared to a level of detail suited to the stage of the Scheme. It has been undertaken with full regard for the Thames RBMP in consultation with the EA and in line with guidance in advice note 18.
8.5	Potential Impacts	The ES should contain details of any proposed surface water drainage strategy, and how this information has been applied to the assessment. The drainage design should take into account the most recent climate change projections available. ECC have provided reference to guidance in their response regarding the design of SuDS to which the Applicant should have regard.	A Drainage strategy (application document TR010029/APP/6.8) is provided as part of the DCO application and outlines the requirements and design of suitable SuDS which has been included where required as mitigation for potential impacts to water quantity and quality.  The latest climate projections, from UKCP18, are presented and discussed in section 14.2.6 of the ES (Chapter 14). Guidance provided by the ECC has also been reviewed – see relevant response specific to ECC comment in Table 2.4.
8.11	Assumptions and limitations	The Inspectorate notes the limitations to data collection identified but advises that the Applicant must ensure that they have a comprehensive set of	Noted, limitations and assumptions are included within the ES (Chapter 8, section 8.6).

Scoping report reference	Other points	Inspectorates comment	Response
		data to inform their assessment. Where limitations are encountered, these should be detailed within the ES along with an explanation of how they have been addressed.	

**Table 1.10: PINS scoping opinion landscape comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
9.2.1	Landscape and visual receptors beyond 1.5km from the perimeter of the scheme	The meaning of 'the perimeter of the scheme' is not defined in the Scoping Report, and no evidence is provided for the appropriateness of a 1.5km study area. It is not clear if the study area has included all features of landscape value which could be affected. It is not clear how the 1.5km relates to determining a ZVI for the assessment. Without this information, the Inspectorate cannot agree to scoping these receptors out at this stage. The ES must define and justify the study area applied and ensure that the impacts of the Proposed Development are assessed. The LBH have provided comment on this matter and the Inspectorate advises that the Applicant should make effort to agree the study area for the assessment with relevant consultees.	The study area as described in Chapter 9 Landscape and Visual has been increased to 2 km from 1.5 km in the Scoping Report following consultation and agreement with local authorities. The study area can be seen on Figures 9.4 and 9.5 in the ES. It was considered that the Scheme would not have a significant effect at a distance greater than 2 km. This conclusion was reached because the nature of the works comprising the Scheme are of a similar nature to the existing junction arrangement, and this therefore reduces the likelihood of significant effects when viewed from a distance greater than 2 km. Beyond 2 km it would be difficult to perceive the changes with the naked eye. Details on the ZVI are provided in Chapter 9, section 9.4 and it is also shown on Figure 9.4 and Figure 9.5 in the ES.
9.6.6 Table 9.2	Landscape effects on Warley, St Faith's and Weald Country Park &	Given the uncertainty regarding the study area applied, and that limited evidence to support scoping this matter out has been presented in the Scoping Report, the Inspectorate cannot agree to	The study area will be determined through agreement with relevant consultees. There will be no direct or indirect landscape effects on these Country Parks as the Scheme is too distant (both

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
	Weald Park (Grade II) Registered Park and Garden	scope this matter out and therefore it must be assessed in the ES. The Inspectorate notes that further assessment of Weald Park will be undertaken as part of the ES Cultural Heritage aspect chapter (paragraph 11.4.7 of the Scoping Report) and advises that appropriate cross-reference is made in the ES between the relevant chapters.	Warley and St Faith's are greater than 1000 m distance) and any potential links with the Country Parks are broken by the presence of the railway line, intervening vegetation, and built development. Weald Park has been assessed as part of the Cultural Heritage Chapter 11 which is crossed referenced in Chapter 9.
9.6.7 Table 9.3	Visual effects on employees at Telecommunications Head Office and nearby residential properties in Brentwood, Boyles Court Grade II Listed building, residential receptors to the north east including Lake House, Colmar Farm, Colmar, Park Farm and Halfway, residential receptors located on Nag's Head Lane linking Brook Street area with Tyler's Common to the south of Junction 28, and residential receptors to the	Reasoning is provided in Table 9.3, that in each case these receptors will not be subject to significant visual effects due their distance from the Proposed Development preventing views or due to existing screening features preventing views. The Inspectorate does not consider that sufficient information has been provided in the Scoping Report to demonstrate that impacts to these receptors would not occur. In the absence of this information the Inspectorate does not agree that these receptors can be scoped out. The Applicant should seek to establish a robust study area based on the extent of the likely impacts and should agree with relevant consultees which receptors should be included in the assessment. It is likely to be helpful to consultees to provide appropriate figures depicting the study area and ZVI when established, as well as the location of receptors.	A robust study area has been established as outlined in Chapter 9, section 9.4 and it has been agreed with relevant consultees which receptors should be included in the assessment.  A ZVI has been produced and is shown on Figure 9.4 and Figure 9.5 in the ES.

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
	north east of the M25 in South Weald situated along Wigley Bush Lane		

**Table 1.11: PINS scoping opinion landscape comments**

Scoping report reference	Other points	Inspectorates comment	Response
N/A	Study area	In connection to comments above, the Inspectorate advises that the study areas for the landscape assessment and the visual assessment need to be justified and efforts made to agree these with the relevant consultees. The Inspectorate notes the intention in paragraph 9.9.1 to consult on the location of viewpoints, photomontages, and the extent of the visual envelope. The Inspectorate agrees that this approach should be followed and that the ES should explain how this approach informed decisions taken in regards to the assessment.	<p>The study area has been developed in agreement with relevant consultees, with consultation on location of viewpoints, and the extent of the visual envelope. An explanation on how this approach informed decisions taken in regards to the assessment is included in Chapter 9, section 9.4.</p> <p>Photomontages have not been produced because the Scheme is generally well screened either through landform or vegetation (or a combination of both) which limits the amount of receptors which might be significantly adversely affected and during consultation with the local authorities this was not raised as required to be considered as part of the assessment.</p> <p>It was felt that photomontages would not significantly enhance the overall findings of the assessment of the effect of the Scheme, but would offer a visual element to support the assessment in a non-technical situation.</p>

Scoping report reference	Other points	Inspectorates comment	Response
9.4	Baseline conditions	The Applicant should ensure that the baseline conditions used to inform the assessment are complete and robust. Information should be sought from the relevant consultees, and the Inspectorate advises the Applicant to have regard to the response from ECC which provides information on local sites of landscape interest.	Comment is duly noted.

**Table 1.12: PINS scoping opinion geology and soils comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
10.6.4 and Table 10.5	Geology as Valuable Resource	The Inspectorate agrees that this can be scoped out due to the absence of mineral resources, geological SSSI or local geological sites (LGS) within the study area, and therefore the absence of pathways by which significant effects could occur.	Noted. This was summarised within the PEIR and was not assessed further in the geology and soils assessment. This is stated in Chapter 10 of the ES.
10.6.5 and Table 10.5	Re-use of soils and waste soils	The Scoping Report proposed to assess this matter in the Materials and Waste aspect chapter and on that basis it is scoped out of this assessment. However, the Inspectorate has not found any evidence that this matter is to be assessed in the Materials and Waste chapter. The Inspectorate requires that the ES includes an assessment of impacts associated with the re-use and disposal of soils, should the potential for likely significant effects be identified.	Noted. Chapter 12 of the ES (Materials and Waste) includes an assessment of the re-use and disposal of soils, as stated in section 12.4 of the ES. The chapter identifies opportunities to re-use soils. This is sign-posted in paragraph 10.1.3 in Chapter 10 of the ES (Geology and Soils).



Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
10.6	Proposed Level and Scope of Assessment	The Scoping Report states that ground investigation (GI) work will be undertaken and used to inform the scheme design (including mitigation design). However, the Scoping Report also implies that this information will not be used to inform the baseline assessment in the ES. The Inspectorate considers that the baseline assessment in the ES should be established using the most appropriate information available and this should include results from any relevant GI work undertaken.	<p>A preliminary ground investigation was carried out in the north-west quadrant of junction 28 and within the Scheme DCO boundary. Data from the preliminary ground investigation have been used in the baseline assessment of geology and soils. Any other available (secondary) data were also utilised. In order to assess risks in locations within the Scheme yet to be intrusively investigated within the ES, a 'realistic and likely worst case' was adopted as detailed in paragraph 10.5.4 of the ES.</p> <p>The main ground investigation has also been completed which will provide data from across the Scheme and target the identified potential sources of contamination. Assessments carried out utilising data obtained from the main ground investigation will be used to update the design and mitigation measures (section 10.9) within the ES (if/where necessary) and will be submitted for review to the relevant bodies once available and before the construction phase of the Scheme.</p>
10.7.2	Proposed Assessment Methodology	The Inspectorate also considers that any assessment of contamination risk should be undertaken having regard to information obtained from the GI work referred to above. The relevant GI information should be included as an appendix in the ES to support the reader.	Noted. Findings of the preliminary ground investigation have been included as Appendix 10.1 of the ES as a Geo-environmental Assessment Report. Assessments carried out utilising data obtained from the main ground investigation will be used to update the design and mitigation measures (section 10.9) within the ES (if/where necessary) and will be submitted for review to the relevant bodies once available and before the construction phase of the Scheme.

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
10.11.2	Assumptions and Limitations	The ES should ensure that all impacts which may result in a likely significant effect have been appropriately assessed. All survey works necessary to inform this assessment should be undertaken prior to an application being made and should be used by and reported within the assessment in the ES. If detailed GI work is required for this purpose it should be undertaken in advance of any proposed application.	Realistic and likely worst-case scenario has been assumed in the geology and soils assessment in the ES (paragraph 10.5.4) for locations yet to be intrusively investigated, therefore any potentially significant effects have been identified. This is detailed in paragraph 10.6.3 of the ES. The conclusions and recommendations of Chapter 10 (Geology and Soils) of the ES will be updated once the final GI information is available.

**Table 1.13: PINS scoping opinion geology and soils comments**

Scoping report reference	Other points	Inspectorates comment	Response
10.2.1	Study area	The ES should include an explanation as to how the study areas have been defined and detail the supporting reasoning. In particular the explanation should include how it appropriately accounts for impact resulting from increased mobility of ground contaminants.	Noted. Chapter 10, section 10.4.1 of the ES includes three justifications of the selected 250 m study area for land contamination and geomorphology and ground stability. Impact resulting from increased mobility of potential ground contaminants has been assessed for the location of the preliminary ground investigation. The study area for the agricultural component of the assessment is confined to the soils affected temporarily or permanently by the Scheme (i.e. the DCO boundary). For farming, it is those holdings potentially affected by the options through land-take and/or severance.
10.7.8	Proposed Assessment Methodology	The Inspectorate notes that the receptors 'nearby residential properties' and 'nearby workers' have no clear definition in the Scoping Report. A	Noted. Any receptors within the 250 m study area have been considered and risks have been assessed separately for each depending on their circumstances/ distance from the Scheme. 'On-site'

Scoping report reference	Other points	Inspectorates comment	Response
		description, in line with the justified study area, should be provided within the ES.	refers to receptors within the Scheme boundary and 'off-site' refers to receptors not within the Scheme but are within the 250 m study area. This description has been included in Chapter 10, paragraph 10.4.2 of the ES and receptors are not discussed in the ES without a clear definition of whether they are within the scheme or within 250 m from the Scheme.
N/A	Figures	The ES should include figures where relevant to support the textual description of the receiving environment and nearby receptors.	<p>Noted. A Figure showing potential sources of contamination and receptors within the Scheme and within 250 m has been produced and is presented within the ES as Figure 10.2. Figure 10.1 displays the area topography. A third figure (Figure 10.3) has been produced which illustrates potential geological hazards within the Scheme and study area.</p> <p>Due to the limited nature of the agricultural land potentially effected, a figure illustrating BMV land/ farm holdings was not produced for the ES as it was not considered useful.</p>

**Table 1.14: PINS scoping opinion cultural heritage comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
11.4.6	Effects to setting of Listed Buildings (except Stony Hills Farm)	The figures presented in the Scoping Report (Figure F-1 and F-2) do not label the listed buildings by name and it is not possible to be confident in the justification provided in the Scoping Report that none of the Listed Buildings identified, except Stony Hills Farm, share	The ES provides a gazetteer with reference numbers (Appendix 11.1, application document TR010029/APP/6.3) to the names of the listed buildings shown on Figure 11.1 and 11.2. In addition, all listed buildings within the study area have been considered in the ES assessments. The

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
		intervisibility to and from the Proposed Development. No Zone of Visual Influence (ZVI) is set in the Scoping Report and no reference is made to how one will be determined. The Inspectorate cannot agree to scope this matter out on the basis of the information in the Scoping Report. The Inspectorate advises all assets likely to experience impacts on their setting are included in the assessment.	ZVI was consulted in the development of the study area.
11.4.20	Effects on Historic Landscape	The Inspectorate is aware that the Proposed Development would introduce new visually prominent structures which may impact upon the historic landscape. The Inspectorate does not agree that the justification provided in the Scoping Report is sufficient to support a decision to scope out the assessment of impacts on historic landscape. The LBH and ECC have also provided comment on this matter in their consultation responses, which the Applicant should take into account.	The historic landscape is considered in the ES, Chapter 11, section 11.7.41.
11.5.1 and 11.5.3	Impacts to setting of designated heritage assets	The assessment of impacts on setting of designated heritage assets should take into account changes in air and noise pollution. The Inspectorate is aware that the Proposed Development may increase air and noise pollution during construction and operation and this should be considered in the assessment of impacts to setting of heritage assets. ECC and the LBH have also provided advice in their responses in this regard which the Applicant should take into account.	The ES has considered the findings of the air and noise assessments in the assessment of impacts to heritage assets.

**Table 1.15: PINS scoping opinion cultural heritage comments**

Scoping report reference	Other points	Inspectorates comment	Response
11.2.1	Study area	The study area applied to the assessment in the ES must be clearly defined and described reflecting the extent of the anticipated impacts. The Applicant should seek agreement with relevant consultees regarding the appropriate study area. The Applicant should take into account the comments made by LBH and ECC in this regard. The Inspectorate recognises that there is likely to be an inter-relationship between the study area applied to this aspect and other aspects such as the landscape and visual impact assessment, and recommends that appropriate cross-reference is made in the ES.	The ES has defined study area in Chapter 11, section 11.4. This includes a 500 m buffer from the DCO boundary and has been developed based on the guidance on DMRB, as well as consultations with stakeholders and professional judgement.
11.4	Baseline conditions	The baseline assessment in the ES should include relevant information on local and regional heritage assets. The Inspectorate refers the Applicant to information received from the Greater London Archaeology Advisory Service (GLAAS) and the LBH regarding assets not yet recorded on the Greater London HER and the Havering Local Heritage List. This information should be obtained and taken into account in the baseline assessment in the ES.	The baseline includes data obtained from the Greater London Archaeological Advisory Service (GLAAS), Essex County Council, and the London Borough of Havering as outline in Chapter 11 of the ES.
11.7 and 11.9	Methodology	The Applicant should seek to agree the methodology with relevant consultees, and have regard to the points raised by LBH and ECC particularly with regards to the guidance available to inform the assessment.	Comments regarding the methodology have been considered through the review of scoping report comments from consulting parties and have been incorporated throughout the ES, Chapter 11.
11.10	Mitigation measures	The Applicant should provide details in the ES of avoidance measures and the specific mitigation	Chapter 11, section 11.9 sets out the mitigation measures recommended by the assessment, and

Scoping report reference	Other points	Inspectorates comment	Response
		measures designed ameliorate any significant effects. Preservation in situ is not mentioned as a potential mitigation measure in this section, and the Inspectorate considers that this should be investigated. Comments on this matter have been provided by GLAAS in their response and the Applicant should have regard to these.	are set out in the REAC (application document TR010029/APP/7.3).
11.11.1	Assumptions and limitations	Many of the assertions in this section regarding the baseline and value of features, and regarding the impacts of the as yet unknown elements of the Proposed Development (eg the location of construction compounds) seem premature in advance of the assessment being carried out. The Inspectorate advises that these assumptions are critically reviewed during the assessment process, taking into account up to date design information and consultation responses. The LBH have also made comment on this matter in their response and the Applicant should have regard to this.	The assumptions and limitations identified in Chapter 11, section 11.6 of the ES have been updated in light of the assessments undertaken. The assessments made in section 11.10 are based on a full review of the heritage assets' value and the impact of the Scheme as identified through review of the design fix.

**Table 1.16: PINS scoping opinion materials and waste comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
12.6.5 Table 12.4	Change in demand for construction materials during the operation phase	The Inspectorate agrees that this matter can be scoped out due to it being unlikely that the operational phase of the Proposed Development will result in significant effects on the market for construction resources	Comment duly noted.



Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
12.6.5 Table 12.4	Change in baseline regional waste arisings during the operation phase	The Inspectorate accepts that the waste generated during the operational phase of the Proposed Development will have a minimal effect on the study area's waste baseline. As a result the Inspectorate considers that significant effects are not anticipated, and that this matter can be scoped out.	Comment duly noted.
12.6.5 Table 12.4	Change in capacity of regional waste infrastructure during the operational phase	The Inspectorate accepts that the waste generated during the operational phase of the Proposed Development will have a minimal effect on the study area's waste infrastructure, and considers that significant effects are unlikely to occur and this matter can be scoped out.	Comment duly noted.
N/A Refer to 10.6.5	Re-use of soils and waste soils	The Scoping Report (paragraph 10.6.5) states that this matter is addressed in this aspect chapter. However, the Inspectorate notes that no information is provided. The Inspectorate requires that the impacts associated with storage and disposal of soils should be assessed in the ES. Crossreference to other aspect chapters should be made where applicable (eg where potential impacts to water quality are identified).	Quantities of soils and the impacts associated with storage and disposal are provided in the ES Chapter 12.

**Table 1.17: PINS scoping opinion materials and waste comments**

Scoping report reference	Other points	Inspectorates comment	Response
12.4	Baseline Conditions	No reference to future baseline is made in this section, and the Applicant should have regard to paragraph 3.3.12 of this Opinion. The future	The mean annual growth estimated in the ECC Local Plan has been taken into account to

Scoping report reference	Other points	Inspectorates comment	Response
		baseline applied should be consistent with that applied to the other environmental aspect assessments in the ES. ECC have provided some advice in their response regarding local mineral and waste planning policy, which the Applicant should take into account when predicting future baseline conditions.	extrapolate future baseline for waste arisings. This is presented in Chapter 12 of the ES.
12.4.4 and 12.4.5	Baseline Conditions	The Scoping Report states that regional information on material resources associated with construction, demolition and excavation (CD&E) is not available. The Applicant should make effort to obtain quantitative baseline data applicable to the assessment where this is available.	The material resources section has been updated in line with other road schemes and uses a regional baseline for material resources.
12.7.5	Proposed Assessment Methodology	Regarding key construction materials, this section indicates that they will be considered within the assessment, but that their sensitivity cannot be assessed. The ES should clearly explain how the assessment will approach the sensitivity of construction materials. The Applicant should make effort to obtain quantitative data to inform the assessment. Any professional judgement applied should be clearly explained and justified.	Methodology adapted, sensitivity will be based on any impact on Mineral Safeguarding Areas. The assessment in Chapter 12 of the ES is based on quantitative data.
12.7.6, Table 12.5	Proposed Assessment Methodology	The Scoping Report explains how sensitivity and magnitude combine to produce a level of effect, stating 'very large to moderate effects are considered to have the potential to be significant, while slight and neutral effects are not considered significant'. Table 12.5 of the Scoping Report presents differently worded 'levels' and does not define how the combination process is to be carried out. The ES should include a clear	Chapter 12 of the ES details assessment methodology, which is based on the latest DMRB guidance.

Scoping report reference	Other points	Inspectorates comment	Response
		methodology explaining how significant effects will be assigned.	

**Table 1.18: PINS scoping opinion people and communities comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
Table 13.7	Community land and facilities	The Scoping Report states that as no community land or facilities are required to construct the Proposed Development, that direct impacts on them will not be considered. The Inspectorate understands from the information in the Scoping Report that indirect impacts to amenity and effects of severance will largely be addressed separately in this and in other aspect chapters. However, no information is presented regarding how the Proposed Development will impact community land and facilities by changes to traffic flows on the road network. Therefore the Inspectorate does not agree to scope this out and advises the Applicant that this matter must be assessed in the ES.	Chapter 13 of the ES includes an assessment of the impact of the Scheme on identified Community Land receptors. This includes an assessment of any changes to access for community land.
Table 13.7	Impacts relating to	The Applicant should have regard to the comments in paragraph 3.3.21 of this Opinion above. Based on the characteristics of the Proposed Development, and without detailed justification being provided in the Scoping Report, the Inspectorate cannot agree to scope this matter out.	This assessment is covered within the Driver Stress Assessment, assessment of the effect on human health and NMU assessments contained within Chapter 13 of the ES.

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
13.6.4	Impacts on equestrians	The Scoping Report states that no bridleways are located within the study area and, a 2014 study of non-motorised users suggested negligible equestrian use of paths in the area (no equestrians were recorded). Subject to this remaining the case in light of future refinements to the study area and updated baseline information, the Inspectorate agrees to scope this out.	Comment duly noted.

**Table 1.19: PINS scoping opinion people and communities comments**

Scoping report reference	Other points	Inspectorates comment	Response
13.2.1	Study area	The study area for land and property is described in the scoping report as being the area immediately adjacent to 'the Scheme'. The study area for community severance is described as comprising affected roads and paths which provide access to community assets. These study areas are not defined in the Scoping Report and the Applicant must ensure that the area assessed is clearly defined in the ES. The Applicant should make an effort to agree the study area with consultees, and the Inspectorate notes that detailed comment on locally and regionally affected routes is provided by ECC in their response.	The study areas are clarified within Chapter 13, section 13.4 of the ES.
13.5.2 Table 13.7	Impacts on non-motorised users	The scoping report states that paths will remain open during construction and that the design of the Proposed Development will seek to maintain access for cyclists and pedestrians. The ES	The impact of the Scheme on NMU's including a baseline assessment is provided within Chapter 13, section 13.7 of the ES.

Scoping report reference	Other points	Inspectorates comment	Response
		should provide details of these measures where they represent fixed design constraints on which the assessment will be based. The Inspectorate notes that non-motorised user baseline information will be desk-based and dates from 2014. The Inspectorate advises the Applicant to ensure the baseline information is as up to date as possible, and information should be sought from local planning authorities and other relevant consultees in this regard.	
13.5	Impacts	Adverse impacts from construction have been identified as temporary. The ES should explain the duration of impacts and what constitutes temporary impact.	The assessment of effects is presented in Chapter 13, section 13.10 of the ES.

**Table 1.20: PINS scoping opinion climate change comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
14.2.3	Preliminary studies and consultations; direct operational GHG emissions; operational water use; other processes; end of life.	Noting that the Scoping Report predicts minimal/negligible GHG emissions associated with these matters, and given the nature of the Proposed Development, it is agreed that significant effects are unlikely to arise, but the Inspectorate asks that the evidence for excluding these processes is included in the ES.	The study area is based on Highways England guidance and this is detailed in Chapter 14, section 14.1.4 in the ES.
14.12.2 Table 14.16	Average (air) temperature change (annual, seasonal, monthly) & Average	Having considered the nature of the Proposed Development and the information in the Scoping Report stating that it will have low climate vulnerability, the Inspectorate considers that	Impacts associated with projected future changes to average temperatures, average wind speed, humidity, sea level rise and drought are scoped out. The ES makes reference to the design

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
	wind speed change (annual, seasonal, monthly) & Humidity & Sea level rise (plus local land movements), storm surge/tide & Water availability/drought	significant effects are unlikely to occur. The Inspectorate is therefore content for this matter to be scoped out of the ES. The ES must make reference to, with appropriate detail, the design constraints and standards on which the conclusions of low climate vulnerability have been based.	constraints and standards (Chapter 14, section 14.2.10 of the ES) on which the conclusion that these will cause low climate vulnerability impacts have been based. It is noted that extreme temperatures and wind gusts are scoped into the assessment.
14.12.2 Table 14.16	Average precipitation (annual, seasonal, monthly) & Storms (tracks and intensity), including storm surge	Given the nature of the Proposed Development, in particular the presence of two watercourses and their associated floodplains, the Inspectorate considers that these matters have the potential to affect the design of the proposals. Therefore, the Inspectorate advises that these matters should be assessed in the ES. The Applicant should clearly state the range of climate projections used for the purposes of any adaptation or resilience assessment, taking into account the anticipated updated projections in 2018.	Impacts associated with precipitation and storms are scoped in. The range of climate projections referenced in the ES is stated in Chapter 14, section 14.2.7. This section of the ES presents UK Climate Projections 2018 (UKCP18) from the Representative Concentration Pathway 8.5 – this is a scenario with a high greenhouse gas concentration trajectory.

**Table 1.21: PINS scoping opinion climate change comments**

Scoping report reference	Other points	Inspectorates comment	Response
14.2.4	Study area data	The Inspectorate notes that the study area will be dependent on the availability of design and construction information and if this data is unavailable, part or all of the affected lifecycles will be excluded from the assessment. The study area must be determined by the extent of the predicted impacts of the Proposed Development,	The ES shows how the study area is determined based on the spatial extent of the vulnerability of the Scheme to climate change, see Chapter 14, section 14.2.4. It also states the area over which climate change projections used in the assessment are applicable, see section 14.2.7.



Scoping report reference	Other points	Inspectorates comment	Response
		and if applicable based on professional judgement in the absence of known data. If necessary the ES should clearly set out the assumptions applied to this assessment in place of this information, and any implications that exist for the robustness of the assessment.	
14.7 Table 4.1, Table 4.2	Significance of effects	The Inspectorate notes that there is currently no specific guidance for carbon emission thresholds, which if exceeded, is considered to be significant. The ES should therefore set out the criteria used to report on the significance of effects. The assessment of significance in the ES should be placed in context to the UK carbon budgets, the associated reduction targets, and in the context of the climate resilience of wider systems over time (as stated in paragraph 14.7.8 of the Scoping Report).	Noted. The assessment of significance has been presented in context with the UK carbon budgets, the associated reduction targets, and in the context of the climate resilience of wider systems over time. This is provided in Chapter 14, section 14.1.10.
14.7.1-14.7.6	Calculation of greenhouse gas emissions	The Scoping Report states that the Applicant will use the Atkins Carbon Knowledgebase (CKB) software to calculate emissions during all the lifecycle of the Proposed Development. Details of this carbon calculation and analysis software tool should be provided within the ES.	The Highways England Carbon Tool has been used for the calculations. Details of the inputs and outputs of the Tool are included in the ES Chapter 14 and in Appendix 14.1.
14.7.16 - 14.7.17	Climate resilience assessment	The Scoping Report does not explicitly set out the methodology that will be used to assess the resilience of the Proposed Development to climate change. The methodology should be set out within the ES.	This is detailed in the ES, see Chapter 14, section 14.2.5.
14.11.1 - 14.11.2	Assumptions and limitations	The Applicant states that for consultation purposes a detailed emissions assessment is not required and where project specific data is	Consultation with the Environment Agency has been undertaken.

Scoping report reference	Other points	Inspectorates comment	Response
		unavailable, suitable proxy data will be used where engineering and construction expertise can be obtained to generate this data. The Inspectorate advises that the Applicant should consult with relevant stakeholders on what data they would require for consultation purposes.	

**Table 1.22: PINS scoping opinion cumulative effects comments**

Scoping report reference	Applicant's proposed matters to scope out	Inspectorates comment	Response
N/A	None identified	N/A	Comment duly noted.

**Table 1.23: PINS scoping opinion cumulative effects comments**

Scoping report reference	Other points	Inspectorates comment	Response
15.4.4 Table 15.2	Zone of Influence / Study Area	The zone of influence or study areas for cumulative effects for environmental aspects of the Proposed Development should be fully explained and justified in the ES. The Inspectorate advises that the Applicant adopt the approach detailed in Advice Note 17, including when determining the list of other developments to take into account in the assessment. The Applicant should make an effort to seek information and agreement from consultees. The LBH and ECC have provided advice regarding the cumulative assessment in their responses.	The methodology follows the approach detailed in Advice Note 17 (described in full in Chapter 15, section 15.5), and has set out ZOI using the study areas utilised in the topic chapters within the ES, providing consistency across the document. LPAs were consulted on several occasions regarding the final list of developments included in the ES. The developments discussed with LPAs were all included in the shortlist for the assessment, and where they met the requirements for the longlist, were included in the full assessment.

Scoping report reference	Other points	Inspectorates comment	Response
15.4.7 Table 15.3	Significance of cumulative effects	The Applicant should provide a clear description and justification in the ES of how significant effects have been determined. This should include a definition of the terms 'short-term', 'longterm', and 'temporary'.	The significance criteria for the in-combination and cumulative effects assessments are detailed in Chapter 15, section 15.5 of the ES. Duration is defined in this section in terms of temporary/permanent effects, rather than long and short term.

## 2. Other respondent comments

**Table 2.1: Scoping opinion comments – Anglian Water Service Ltd**

Topic	Comment	Response
Project description	<p>Anglian Water would welcome further discussions with the applicant prior to the submission of the Draft DCO for examination.</p> <p>In particular it would be helpful if we could discuss the following issues:</p> <ul style="list-style-type: none"> <li>• Wording of the Draft DCO including protective provisions for the benefit of Anglian Water.</li> <li>• Requirement for potable (clean) water and wastewater services.</li> <li>• Impact of development on Anglian Water's assets and the need for mitigation.</li> <li>• Pre -construction surveys.</li> </ul>	<p>Potential water quality impacts from road/highway drainage are being mitigated and managed through the Drainage strategy (application document TR010029/APP/6.8).</p> <p>As no significant effects on surface water features have been identified, no significant effects on licenced abstractions or consented discharges are predicted.</p>
Ground conditions and contamination	<p>It is essential to protect the public water supply sources from contamination from any activities that might cause pollution, both during construction and when operational. Reference is made to the realignment of a watercourse. Consideration should be given to the location of existing boreholes in the ownership of Anglian Water.</p>	<p>No groundwater Source Protection Zones and no known active groundwater abstractions are present within the Scheme or geology and soils study area (Chapter 10, section 10.7). Anglian Water have been contacted to confirm whether any new boreholes have been introduced within the study area since the scoping report was written and correspondence confirming the study area does not coincide with Anglian water catchment is presented in Appendix 10.6 of the ES.</p> <p>Data from the preliminary ground investigation (samples taken within historical landfill) have been assessed using generic assessment criteria protective of surface water (Environmental Quality Standards) within the ES (Chapter 10, section 10.7).</p> <p>Data obtained from the main ground investigation will be used to assess potential risks to controlled waters from groundworks, by means of risk assessment (including detailed</p>

Topic	Comment	Response
		<p>quantitative risk assessments and piling risk assessments). Design and mitigation measures provided in the ES (Chapter 10, section 10.9) will be reviewed once the final data has been assessed and updated if necessary.</p> <p>Any potential pathways created as a result of the operation of the Scheme are assessed in the Road Drainage and Water Environment Chapter (Chapter 8 of the ES).</p>
Water resources and flood risk	Reference is made to the evidence provided by the Environment Agency in relation to the risk of fluvial and surface water flooding. Anglian Water is responsible for managing the risks of flooding from surface water, foul water or combined water systems. Consideration should be given to all potential sources of flooding including sewer flooding.	All potential sources of flooding have been assessed as part of the ES and the accompanying FRA (application document TR010029/APP/6.6).
Asset encroachment	<p>It is suggested that the Environmental Statement should include reference to the foul sewerage network, sewage treatment and water services.</p> <p>The Environmental Statement should include reference to Anglian Water's existing assets and any potential impacts from the above development. We would expect any requests for alteration or removal of foul sewers or water mains to be conducted in accordance with the Water Industry Act 1991.</p> <p>Anglian Water is keen to work with the Developer to understand the full impact of the project.</p>	There are no Anglian Water assets within the Scheme area. Thames Water have one sewer and Essex and Suffolk Water have a water main.

**Table 2.2: Scoping opinion comments – Chelmsford City Council**

Topic	Comment	Response
	I can confirm that Chelmsford City Council has no comments to make in relation to the Planning Inspectorate adopting its Scoping Opinion.	Comment duly noted.

**Table 2.3: Scoping opinion comments – ESP Utilities Group Ltd**

Topic	Comment	Response
	<p>I can confirm that ESP Gas Group Ltd has no gas or electricity apparatus in the vicinity of this site address and will not be affected by your proposed works.</p> <p>ESP are continually laying new gas and electricity networks and this notification is valid for 90 days from the date of this letter. If your proposed works start after this period of time, please re-submit your enquiry.</p>	Comment duly noted.

**Table 2.4: Scoping opinion comments – Essex County Council**

Topic	Comment	Response
Transport	The format for each environmental topic, as outlined in section 1.3 and Table 1.1 is of assistance and provides some clarity on the topics, emerging data, assessments and mitigation proposals to date. That said the omission of a dedicated “Transport” section summary or identification of where transport issues are embedded within the report should be addressed.	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which explains the modelling and baseline transport information.
Transport	The Scoping Report rightly focuses on the immediate environmental issues, but the Examining Inspectors will surely wish to see forecast traffic figures upon which to assist their judgements. We understand that final figures	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which assesses the impact of the proposed M25 junction 28 improvement scheme on the

Topic	Comment	Response
	are still in preparation but will be available for submission with the draft DCO. ECC therefore request the preparation of a full Transport Assessment as soon as this information does become available, the scope of which should be agreed with ECC as soon as possible.	strategic and local highway network, road safety and local sustainable methods of transport.
Transport	ECC would have anticipated a dedicated transport section within this Scoping Report, as part of the overall Environmental information. The transport assessment should provide this information to enable both HE and ECC strategic networks to be planned holistically.	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which assesses the impact of the proposed M25 junction 28 improvement scheme on the strategic and local highway network, road safety and local sustainable methods of transport.
NSPI procedure	It is noted that the Planning Inspectorate assigned projects to geographical areas to make them “easier to find”, however this project covers two geographical areas on the PINS website. It is recommended that the project is listed with a weblink on the “East of England” page as well as the “South East”, to assist with accessibility to the information.	The project is only listed in the ‘South East’ location the Planning Inspectorate’s website.
Highways and transport	As indicated above ECC wishes to be fully engaged in the Transport Assessment to accompany this project and would anticipate this being a dedicated section within the PEIR. The issues for ECC are the impact on the Essex community and businesses, including all transport users, both directly and connectively to London but also the wider transport implications including changes in demand on strategic routes	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application. A scoping report was produced and shared with ECC to comment on the 26 July 2019.
Highways and transport	It is the expectation that a Transport Assessment will be supported by modelling and that that modelling will include appropriate forecast years. Modelling results will also support the assessment of the air quality and noise impacts of the scheme (Chapter 5 and 6).	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which includes the base and future modelling process and results. Forecast years of 2022 and 2037 have been assessed.



Topic	Comment	Response
		The transport modelling results have been used to inform the air quality and noise impact assessments for the Scheme forecast years.
Highways and transport	It is recommended that modelling includes the neighbouring Transport and Highways Authorities. Any transport assessment should include the A12, A120, A127, A130, A13 and M11.	The transport modelling process has been outlined within the Transport assessment (application document TR010029/APP/7.4). The strategic modelling is based on the Highways England South East Regional Traffic Model (SERTM).
Highways and transport	The Environmental Scoping Report does not refer to a transport assessment or transport modelling undertaken to inform the environmental assessment, including Noise and Air Quality Assessments. In view of the importance of the junction, such modelling would help to assure ECC that the proposals for the junction are robust and would provide the necessary capacity, service and resilience towards a reasonable planning horizon	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents. The transport modelling results have been used to inform the air quality and noise impact assessments for the Scheme forecast years.
Highways and transport	A Transport Assessment should also address road safety and accident management, including diversion routes to help understand the network impact in the event of accidents or other events affecting the junction and the adjacent M25 and M11.	The Transport assessment (application document TR010029/APP/7.4) Chapter 4 covers road safety and the outcomes of the Road Safety Audit (RSA) is included in Chapter 7.
Highways and transport	All Chapters from 5 through 13, refer to the environmental considerations during construction but there are no indications that assessment of construction traffic has or will be undertaken.	Each topic chapter has assessed the effects of construction and these are detailed in the ES.
Highways and transport	Areas of interest will be: <ul style="list-style-type: none"> <li>Impact of traffic management during construction to assess impact on the wider network;</li> <li>Programming of construction work and traffic management to assess the interaction with other construction on the wider network, be it the, A13 road</li> </ul>	The Transport assessment (application document TR010029/APP/7.4) Chapter 7 summarises the construction impacts of the scheme.

Topic	Comment	Response
	<p>widening, A127/A130 Fairglen Interchange improvements, the A127 route management strategy; M25 junction 28, A12 improvements and A120 Braintree to A12;</p> <ul style="list-style-type: none"> <li>• Routes and programming of delivery and disposal of material and equipment to the site, to assess the potential impact on the Essex network;</li> <li>• Understanding of employee access to the site, job numbers and expected modes of travel, including sustainable access; and</li> <li>• Road safety during construction and management of events to minimise wider network impact.</li> </ul>	
Highways and transport	<p>The strategic routes referred to above provide connectivity within Essex and connect Essex to London and the wider UK and are vital for connecting the economies of Essex and London. ECC needs to be satisfied that any impacts on the strategic routes connectivity, capacity and resilience are addressed and potential benefits for the Essex economy are optimised. ECC requires further data and analysis on the wider strategic routes to:</p> <ul style="list-style-type: none"> <li>• Identify the impact on Essex and surrounding areas;</li> <li>• Establish the projected increase in traffic arising from the scheme and the cumulative impact of current planned growth (and transport projects);</li> <li>• Establish the implications, sensitivity and inter-relationship on transport movements across the wider strategic network;</li> <li>• Understand the timescales for project delivery and the cumulative impacts and timing with other major transport infrastructure projects in the vicinity, be it the, Lower Thames Crossing, A13 road widening, A127/A130</li> </ul>	<p>A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which includes the base and future modelling process and results.</p>

Topic	Comment	Response
	<p>Fairglen Interchange improvements, the A127 route management strategy; A130, M25 junction 28, A12 improvements (Brook Street to Margaretting Part of RIS 1) and A120 Braintree to A12;</p> <ul style="list-style-type: none"> <li>• Understand the sustainable transport provision for employees and freight during both the construction and operational phases of the development. For example, how will employees travel to the site?;</li> <li>• Understand the impact on traffic exiting southbound from Brentwood on the A1023 Brook Street, and existing traffic congestion at this junction; and</li> <li>• Understand the implications of the scheme on the public Byway which crosses the southern end of A1023, runs south of Poplars and crosses M25 slip-road onwards to Putwell Bridge Farm and Oak Farm, to south of M25.</li> </ul>	
Minerals and waste planning	<p>ECC is the host Minerals and Waste Planning Authority in the two tier administrative area of Essex, and is the host authority in respect of the “Brentwood” element of the project.</p> <p>The Essex Minerals Local Plan - Adopted July 2014 concerns the administrative area of Essex only, and seeks to ensure a local supply of aggregates for the County.</p> <p>The Essex and Southend on Sea Waste Local Plan - Adopted October 2017 concerns the administrative area of Essex and Southend on Sea only.</p>	Comment is duly noted. Essex County Council has been considered the regional area for capacity baseline in Chapter 12 of the ES.
Lead local flood authority – Flood and water management	Any surface water related issues within the boundary of Brentwood should be addressed to ECC who are the LLFA for this area. As such any development within this area should adhere to ECC’s ECC Sustainable Drainage Systems (SuDS) Design Guide.	Table 8.1 in Chapter 8 Road Drainage and the Water Environment in the ES now references ECC guidance.

Topic	Comment	Response
	Table 8.1 should make reference to the ECC Sustainable Drainage Systems (SuDS) Design Guide as part of the list of local policy affecting the site.	
Lead local flood authority – Flood and water management	ECC advises that under paragraph 8.4.18 consideration should also be given to surface water flood risk in the area. While the majority of surface water flood risk is linked to main river flooding, there are also standalone areas of surface water flood risk in this area which should be addressed as part of the development.	The potential for surface water flooding has been incorporated into the ES Chapter 8 and the accompanying FRA (application document TR010029/APP/6.6).
Lead local flood authority – Flood and water management	Within Table 8.3 the focus on water quality should not be limited to Water Framework Directive (WFD) targets but should also more generally try to remove pollutants entering into the water environment wherever possible through the use of surface water drainage features. Highways Agency Water Risk Assessment Tool (HAWRAT) uses less conservative assessments of the impact of pollutants, therefore ECC advises that preference should be given to measures highlighted in the CIRIA SuDS manual C753.	The CIRIA SuDS manual was taken into account alongside the assessment using HAWRAT. However, HAWRAT is a tool that is specifically designed for road discharges and takes into account more factors (such as traffic density, catchment area and stream flow), so gives a more robust risk assessment for specific outfalls – it is even referenced in the SuDS manual as the method to use for motorways and trunk roads (Table 26.2). Some of the mitigation use and performance criteria are relevant from the SuDS manual.
Lead local flood authority – Flood and water management	Similarly as above, the 2009 DMRB referred to in Paragraph 8.7.1 does not use the most up to date methods for the assessment of the water environment. Where possible reference should be made to the emerging document and local criteria for the assessment of the impact of surface water flood risk and pollution mitigation.	The DMRB and HAWRAT was the adopted methodology for the surface water quality assessment at the time of reporting. It is acknowledged that since August 2019, this has since been superseded by LA 113 and HEWRAT. However such guidance was not published until post submission of this Schemes assessment.
Lead local flood authority – Flood and water management	Under paragraph 8.9.1 please be advised that at this stage no consultation has taken place with ECC as the LLFA for the Brentwood area.	Consultation with Lead Local Flood Authorities – ECC and Havering London Borough has been undertaken throughout the design process to ensure that the Scheme has been designed to be compliant with the objectives of the WFD and that feasible opportunities for improvements to the water environment have been integrated into the Scheme.

Topic	Comment	Response
Public health and wellbeing	ECC is the Public Health advisor in the two tier administrative area of Essex, and is the host authority in respect of the “Brentwood” element of the project. ECC Public Health wish to engage with this process in liaison with colleagues in Public Health England and respective Local Authority Public Health advisors (including environmental health).	The scope of the assessment of human health contained within Chapter 13 People and Communities of the ES was informed by comments from PHE.
Public health and wellbeing	The wider determinants of health, with reference to any potential socio-economic benefits, should be explored in more depth i.e. employment opportunities.	An assessment of the impact of the Scheme on the local economy and employment is included in the assessment of human health contained within the ES Chapter 13 People and Communities.
Public health and wellbeing	Issues of severance from this proposal on connectivity with walking and cycling needs to be examined in further depth	An assessment of the impact of the Scheme in terms of severance to NMU routes and PRoW's is included within the ES Chapter 13 People and Communities.
Public health and wellbeing	We would request that Environmental Health colleagues in impacted authorities and Public Health England are consulted so to ensure that the potential environmental impacts upon human health are raised with a specific reference to include Mental Health as part of this analysis.	Engagement with the relevant authorities has taken place during the pre-application process including liaison with Environmental Health Officers. Statutory consultation and supplemental consultation also included the relevant LPA's as consultees.  The human health assessment contained within Chapter 13 People and Communities of the ES includes an assessment of the impacts of the Scheme on mental health and wellbeing.
Public health and wellbeing	There appears to have been no engagement with Public Health as part of the consultation process in Section 13 “People and Communities” which needs to be addressed.	The scope of the assessment of human health contained within Chapter 13 People and Communities was informed by comments from PHE.
Public health and wellbeing	The current proposals for the human health element of the Environmental Impact Assessment would benefit from Public Health input, advice and guidance.	The human health element of Chapter 13 People and Communities in the ES has been completed by a Health Impact Assessment specialist who is a member of the International Association for Impact Assessment, an affiliate of the Institute of Environmental Management, an associate of

Topic	Comment	Response
		the Faculty of Public Health and a fellow of the Royal Society of Public Health.
Public health and wellbeing	A more detailed overarching health element is required as either an extended, integrated EIA or a stand -alone health impact assessment.	An extended human health assessment is included within Chapter 13 People and Communities of the ES.
Strategic Planning, Economic Growth, Regeneration and Skills	In paragraph 15.2.8 reference should be made to the Brentwood Enterprise Park proposed in Brentwood's Draft Local Plan 2016, which is located at M25 Junction 29 to the north of the scheme study area. It should be noted that this strategic allocation is within both the permanent and temporary land requirements for the Lower Thames Crossing Scheme.	Brentwood Enterprise Park has been included as a receptor in both the Development Land section of Chapter 13 People and Communities of the ES and within Chapter 15 Assessment of Cumulative Effects.
Strategic Planning, Economic Growth, Regeneration and Skills	Reference should also be made to the Dunton Hills Garden Village allocation in the Brentwood Draft Local Plan 2016, which is a proposed major housing development along the A127 corridor to the south east of the scheme study area. Whilst it is not within the immediate vicinity of the study area, given the quantum of proposed development (2,500 new homes and at least 5ha of employment land) it should be considered as part of the cumulative impacts.	Dunton Hills Garden Village has been included as a receptor in both the Development Land section of Chapter 13 People and Communities of the ES and within Chapter 15 Assessment of Cumulative Effects.
Historic Environment and Archaeology	With regards to the proposed study area set out in paragraph 11.2.1, ECC considers that 500m is a sufficient distance for Non-Designated Heritage Assets and Grade II listed buildings. It is recommended that a 250m additional buffer zone is also included to enable consideration of the impact of the proposal upon Grade I and II* listed heritage assets within the wider environs.	An additional 250 m buffer from the current study area would not encompass any additional Grade I and II* listed buildings.
Historic Environment	In addition to the guidance and policies listed in section 11.3, reference should also be made to Historic England Good Practice Advice Note 3: The Setting of Heritage	Reference has been made to the relevant documents within the ES, Chapter 11. The assessment of impacts to the settings

Topic	Comment	Response
and Archaeology	Assets (March 2015). The guidance is clear that contribution of setting to the significance of a heritage asset is not dependent on inter-visibility, and this has been clarified in a number of recent appeal decisions. Therefore it is erroneous to conclude, in paragraph 11.4.6, that there will be no requirement for further, detailed assessment of Listed Buildings in the next stages of the EIA process.	of listed buildings has been done in accordance with the guidance and is detailed in the ES Chapter 11, section 11.10.
Historic Environment and Archaeology	Whilst it is acknowledged that the scheme is to improve an existing junction that has already had a significant visual impact on the historic character of the area, ECC considers that the assumption in paragraph 11.4.22, that as a result there will be no additional adverse impacts, is inaccurate. Any harm caused will be cumulative, in addition to the harm already caused, rather than considered independent of it. ECC therefore recommends that the historic landscape should be scoped in, rather than excluded, in Table 11.3.	Cumulative impacts are addressed in the Cultural Heritage chapter of the ES, Chapter 11, section 11.11. The historic landscape is considered in the Cultural Heritage chapter of the ES, Chapter 11, section 11.7.
Historic Environment and Archaeology	In addition to the two types of harm identified in paragraph 11.5.1, consideration should be given to secondary impacts upon heritage assets, such as the potential requirement for secondary/double glazing which may arise as a result of increased noise pollution, or the erection of new or taller boundary treatments to screen views.	No impacts to the significance of listed buildings or other historic built environment have been identified. As such, secondary impacts were not considered.
Historic Environment and Archaeology	ECC considers that it is important that the impact of increased heavy goods vehicles associated with construction is assessed, and access/transport arrangements altered if there is potential for direct harm. ECC therefore considers that the conclusion in paragraph 11.5.3 that “the operation of the proposed route is not likely to result in permanent significant effects on designated heritage assets” needs to be evidenced further.	The Cultural Heritage chapter of the ES (Chapter 11) assesses the impact of the Scheme on the significance of heritage assets. The construction and access routes would have no direct impacts on designated heritage assets.



Topic	Comment	Response
Historic Environment and Archaeology	In respect of section 11.9 ECC seeks assurances that identified stakeholders will not be consulted in isolation. Any future meetings regarding heritage should include representatives of all areas irrespective of local planning authority boundaries to ensure a consistent approach. It would be beneficial for Archaeology, Historic Buildings, and Landscape to be considered and consulted together given the interrelation of the disciplines.	Details on the consultation regarding heritage are provided in the Consultation report (TR010029/APP/5.1).
Historic Environment and Archaeology	It has previously been recommended that geophysical survey work be carried out as part of the assessment programme and its results included in the ES (paragraph 11.10.1), however ECC have past experience that geophysics is not always that successful on clay geology. ECC therefore recommends more extensive trial trenching than perhaps the geophysics results suggest may be needed. This will obviously depend on the survey results and design of the scheme.	The Cultural Heritage, Chapter 11 of the ES, discusses the need and usefulness of geophysical surveys in the study area and notes the difficulty of doing so. The ES recommends an Archaeological Mitigation and Management Plan that would include careful consideration in the methodologies use to characterise and evaluate archaeological remains impacted by the Scheme.
Landscape	In respect of significant landscape impact, ECC advises that in addition to Alder Wood, the Grove and Lower Vicarage Wood, there are also a number of other Local Wildlife Sites (LoWS) and woodland areas in the local area that will be adversely affected, and combined could have the potential to affect the local landscape character.	The Landscape and Visual Chapter 9 of the ES, discusses the potential impact upon landscape receptors primarily landscape character. Direct landscape effects (on woodland) would be experienced by Alder Wood and The Grove. It is felt that the effects on landscape character from the Scheme would be restricted as a consequence of surrounding landform. Effects upon Local Wildlife sites are included within Chapter 7 Biodiversity of the ES.
Landscape	ECC considers that it is important that viewpoints are identified at all significant landscape areas within the study area. It is recommended that this should include all LoWS, Ancient Woodlands and Registered Parks and Gardens.	Viewpoints are used to reflect potential impacts upon visual receptors rather than landscape receptors. Not all areas classed as LoWS have public access therefore these would not warrant a viewpoint assessment.
Landscape	Section 9.2 identifies a study area of 1.5km from the site boundary. ECC recommends that this is increased to 2km,	Study area within the ES Chapter 9 has been increased to 2 km from the DCO boundary. Using a combination of site

Topic	Comment	Response
	at this early stage, in order to identify whether, as stated in paragraph 9.11.2, distant views from outside the 1.5km study area are “unlikely to be discernible given the distances involved.” By conducting baseline studies on a larger study area, any discernible areas can then be ruled out of future studies with evidence to support the decision.	based and desktop analysis, the ability to rule out receptors having the potential for significant views beyond this distance was undertaken. This was also discussed and agreed with the local authorities.
Landscape	ECC recommends that once the impact has been measured, and the resulting significance on the landscape character and key visual receptors has been assessed, mitigation measures should be sourced off site as well as through onsite landscape integration. For instance, offsetting mitigation at an external community landscape project/site could be funded.	This initiative would have only limited benefits on visual receptors. It's possible that some benefit could be found on landscape character receptors. However, the starting point for the Scheme would be looking at providing mitigation within the confines of the DCO boundary, both for landscape and visual receptors.
Landscape	ECC recommends that the Essex Landscape Character Assessment is taken into account, furthermore the assessments should take into account both the temporary and permanent implications of the proposal.	The relevant areas within the Essex Landscape Character Assessment has been referred too within the ES text, For the local landscape character areas (which contain a greater degree of detail) the following were referred to: Regional landscape character areas (LCA) identified by Essex County Council (ECC) and defined by the Braintree, Brentwood, Chelmsford, Maldon And Uttlesford Landscape Character Assessment (Chris Blandford Associates, September 2006). For areas within the London Borough of Havering the regional LCAs are defined in the Land of the Fanns Landscape Character Assessment (2016).
Landscape	The Thames Chase Community Forest, which is located to the south of the A12 inside the M25 should be included in the considerations in Chapter 9 – Landscape and Visual, and the Thames Chase Trust should be consulted as part of this process.	Reference has been made to the Thames Chase Community Forest plan and it's objectives. This has been included within the baseline section of Chapter 9.
Landscape	ECC recommend that, given the wooded and hedged landscape surrounding the junction, that consideration should be given to the full visual envelope on all sides of	All receptors falling within the visual envelope have been considered within the LVIA assessment in Chapter 9.

Topic	Comment	Response
	the scheme in respect of visual intrusion. This should be in terms of the construction phase, but more importantly in terms of the operational phase of the scheme.	
Natural Environment	ECC considers the approach taken in Chapter 7 – Biodiversity to be fairly robust.	Comment is duly noted.
Natural Environment	ECC welcomes the use of the approach set out in paragraph 7.10.1, of “No Net Loss and Net Gain of biodiversity”. ECC recommends that this should be based on the ‘Biodiversity Net Gain - Good practice principles for development’. The use of the Defra Metric to demonstrate loss and gain is also recommended. ECC seeks overall biodiversity enhancements as a result of the scheme.	Current legislation does not require NSIP projects such as this Scheme provide net gain or no net loss. There would be unavoidable permanent loss of land as a result of construction, including the loss of veteran trees. However, the Scheme has been designed to maximise opportunities for biodiversity through appropriate re-planting following construction and the inclusion of a long term landscape and ecology management plan. ECC have been consulted on the initial proposals and will be consulted on the outline management plan.
Natural Environment	Under paragraph 7.2.3, please note that Local Wildlife Sites are generally abbreviated to LoWS in Essex.	The abbreviation LoWS has been used in the ES Chapter 7.

**Table 2.5: Scoping opinion comments – Health and Safety Executive**

Topic	Comment	Response
	HSE does not comment on EIA Scoping Reports but the attached information is likely to be useful to the applicant (below).	Comment duly noted.
Will the proposed development fall within any of HSE’s	The redline boundary of the development falls with the consultation zones of two major accident hazard pipelines: HSE ref: 8146 Operator: Cadent Gas Ltd Pipeline ref: 2405	Consultation with both Cadent Gas and National Grid has been ongoing during the preliminary design stage. Details on the consultation are provided in the Consultation report (TR010029/APP/5.1).

Topic	Comment	Response
consultation distances?	<p>Pipeline Name: Hordon / Abridge (2)</p> <p>HSE ref: 8191</p> <p>Operator: National Grid PLC</p> <p>Pipeline ref: 2450</p> <p>Pipeline Name: 18 Feeder Stapleford Tawney / Tilbury Thames North</p>	
Hazardous Substance Consent	<p>The presence of hazardous substances on, over or under land at or above set threshold quantities (Controlled Quantities) may 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.</p> <p>Hazardous Substances Consent would be required if the site is intending to store or use any of the Named Hazardous Substances or Categories of Substances and Preparations 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.</p>	<p>Preliminary assessment indicated that soils excavated as part of the Scheme would be classified as non-hazardous.</p> <p>Any hazardous wastes are anticipated to be produced will be in low quantities; any substances hazardous to health will be handled and stored in line with the Control of Substances Hazardous to Health (COSHH) regulations, and health and safety procedures adopted by the Scheme contractor.</p>
Explosive sites	HSE has no comment to make as there are no licensed explosives sites in the vicinity.	Comment duly noted.
Waste	In respect of waste management the applicant should take account of and adhere to relevant health and safety requirements. Particular attention should be paid in respect of risks created from historical landfill sites. More details can be found on HSE's website.	Comment duly noted. The Principal Contractor will be responsible of implementing health and safety measures in accordance with relevant regulations and site conditions. This information will be passed onto the Principal Contractor.
Electrical Safety	No comment from a planning perspective.	Comment duly noted.

**Table 2.6: Scoping opinion comments – Historic England**

Topic	Comment	Response
Cultural Heritage	I have previously advised Atkins working on behalf of Highways England on the desirability and form of geophysical survey of the site and I recommend that this work be carried out as part of the assessment programme and its results included in the ES.	Due to vegetation coverage and soil conditions, pre-ES geophysical survey was considered disproportionate to the Scheme requirements. An Archaeological Mitigation and Management Strategy is recommended to identify, evaluate and record archaeological assets impacted by the Scheme as outlined in Chapter 11 of the ES.
Cultural Heritage	Consultation with GLAAS during data gathering will be necessary – recent fieldwork in Havering between the A12 and the Ingrebourne has identified a hitherto unexpected prehistoric site just south of the line of the Colchester Road. Other remains not yet on the GL HER include the structures from historic twentieth century aerodrome at Maylands, discovered in the Cotswold DBA.	Consultation with GLAAS has been ongoing during the preliminary design state and has identified additional remains not yet on the HER, which have been considered in the ES, Chapter 11.
Cultural Heritage	More importantly, I disagree with an assumption in the scoping, namely that preservation by record of significant buried remains can be considered the only desirable mitigation of the scheme's impact in EIA terms. It is at best, an offsetting of the impact. The applicants should make provision for the preservation in situ of important remains, including design changes where appropriate, in order that important archaeological heritage is not destroyed.	An Archaeological Mitigation and Management Strategy is recommended as a requirement of the DCO, which would specify evaluation of archaeological remains and treatment of those identified as being nationally significant and requiring preservation <i>in situ</i> . This is outlined in the ES Chapter 11.

**Table 2.7: Scoping opinion comments – London Borough of Havering**

Topic	Comment	Response
Table of Contents	It is noted within the table of contents that the Scoping Report does not include a specific section addressing the issue of traffic and transport. This is an important omission and must be rectified in the ES.	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which assesses the impact of the proposed M25 junction 28 improvement scheme on the strategic and local

Topic	Comment	Response
		highway network, road safety and local sustainable methods of transport.
Section 1 – Introduction	Section 1.1.2 refers to construction on the scheme beginning by March 2020. Officers are aware that in recent weeks Highways England has announced a “reprofiling” of delivery of a number of their projects contained within their Road Investment Programme including that of the M25 Junction 28 improvement scheme. This has resulted on the M25 Junction 28 improvement scheme not scheduled to commence construction until 2021/22. The up to date position in terms of scheme delivery should be reflected in the ES.	Construction of the Scheme is due to commence in 2022. Chapter 2 of the ES provides more details on the construction timeframes.
Section 2 - The Project	Section 2.4.1 recognises that the scheme falls within the Green Belt and this is important because this should provide an important context for considering the visual impact of the proposals. National planning policy requires that a very careful and sensitive approach is taken to development in the Green Belt so as to protect and maintain its character and appearance. Havering strongly considers that this test is applicable to this scheme in Havering’s Green Belt and all aspects of the scheme in Havering must be designed to minimise the adverse impact on its Green Belt.	An assessment of the Scheme against national Green Belt policy is included within the Case for the Scheme document (application document TR010029/APP/7.1).
Section 2 – The Project	Section 2.5 should fully explain how the proposed scheme will interact with the PBA pipeline that runs north – south across the scheme. Very few details appear to have been included within the Scoping Report about how this scheme will impact on this key piece of infrastructure.	Utilities diversions are discussed in Chapter 2 of the ES.
Section 2 – The Project	Section 2.5.6 sets out the construction phase of the project, however there is little information contained within the Scoping Report regarding the potential impacts of the	Chapter 2 of the ES provides more details on the construction phasing and impacts on traffic.

Topic	Comment	Response
	construction phase on the local area and on traffic. This must be considered and explained in the ES.	
Section 2 – The Project	It is essential that the ES has a comprehensive suite of information and measures to deal with and mitigate the adverse impacts of construction within the site of the project and in the area beyond (including the highway network).	Mitigation measures required to mitigate the adverse impacts of construction of Scheme are provided in the ES and in the Outline CEMP (application document TR010029/APP/7.2) and the REAC (application document TR010029/APP/7.3).
Section 2 – The Project	A Construction Code of Practice needs to be incorporated into the ES.	Construction Codes of Practice are listed in the Outline CEMP (application document TR010029/APP/7.2) and the REAC (application document TR010029/APP/7.3) where relevant.
Section 3 – Alternatives	It should be recognised that Stakeholders were involved as part of the process for selecting a Preferred Route Announcement through consultation responses and involvement in evaluating route options.	The Alternatives chapter (Chapter 3) of the ES outlines that stakeholders have been involved in the selection process and shaping of the design for the Scheme.
Section 4 – Scope of Assessment	Section 4.1.4 sets out the list of topics that the scoping of the ES should consider. Havering does not have any issue with the topics that have been set out but there must be a reference to traffic and transport. The ES must have an individual chapter specific on traffic and transport.	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application.
Section 4 – Scope of Assessment	Section 4.1.6 sets out EIA directive new requirements on topics to be included in the EIA which includes monitoring which is welcome. There is little information in the scoping report, however, as to how monitoring both during construction and post scheme implementation will be carried out in relation to the different topical areas such as noise, air quality etc. There should be a specific chapter on Monitoring within the ES setting this out.	Monitoring details are provided in each ES chapter (Chapters 5 to 14) and in the Outline CEMP (application document TR010029/APP/7.2).
Section 4 – Scope of Assessment	Section 4.10.1 states that a Health Impact Assessment and an Equalities Impact Assessment will be produced, if required. Such assessment should be a requirement and the preparation of the final ES should take place alongside	Coverage of health in the ES has been principally be assessed in the People and Communities chapter (Chapter 13), using the sub-topics scoped in to this chapter as a basis



Topic	Comment	Response
	an Equalities Impact Assessment and a Health Impact Assessment and the findings of these should inform the ES.	for the assessment. Health effects have also been considered in each topic chapter as relevant to that assessment, for example, Air Quality (Chapter 5) and the effects of the Scheme on health issues relating to air quality.
Section 5 – Air Quality	The report indicates that dust from construction traffic and pollution from operational traffic will be part of the full impact assessment (IA), for receptors within 200 metres. The report also indicates that construction noise and vibration and operational noise and vibration will be part of the full IA for the same receptors. Contaminated land will also be assessed in the full impact assessment. At this stage Havering has no specific comments on those factors but must have the opportunity to influence the development of the IA.	An assessment on the dust from construction traffic and pollution from operational traffic is provided in the Air Quality Chapter 5 in the ES. An assessment of contaminated land is provided in the Geology and Soils Chapter 10 of the ES.
Section 5 – Air Quality	The scoping report suggests that community liaison “should be considered” in relation construction noise. Havering considers it must be a requirement and makes the same comment about Section 61 consent.	The Noise and Vibration Chapter 6 of the ES, the Outline CEMP (application document TR010029/APP/7.2) and the REAC (application document TR010029/APP/7.3) all outline the requirement to consult with local authorities regarding construction noise and vibration limit levels and Section 61 applications.
Section 5 – Air Quality	Section 5.3.11 sets out local planning policy in relation to air quality. The ES must also take into consideration the targets Havering has contained within its Local Implementation Plan (LIP) for reducing levels of NO2 and PM10.	The targets within the London Borough of Havering’s Local Implementation Plan are included in Table 5.2 of the Air Quality Chapter 5 in the ES.
Section 5 – Air Quality	Section 5.3.15 – sets out Local Air Quality strategies. Havering does not currently have an Air Quality Action Plan (AQAP) but a draft AQAP is planned to go out to public consultation early in the new year and be formally adopted in the Spring of 2018. This must be taken into account in the ES	The London Borough of Havering Air Quality Action Plan 2018-2023 is included in Table 5.2 of the Air Quality Chapter 5 in the ES.

Topic	Comment	Response
Section 5 – Air Quality	Section 5.4.16 states that air quality monitoring through diffusion tubes is carried out at a number of locations close to the site. The ES should consider diffusion tube monitoring site locations TfL undertake along the A12 in Havering.	The baseline conditions section of the Air Quality Chapter 5 in the ES has been updated from the scoping report to include monitoring data from diffusion tubes within the air quality study area.
Section 5 – Air Quality	Section 5.5.3 explains the potential impact of construction dust on air quality. The intention to implement best practise mitigation measures is welcome. Consideration must be given to undertaking a Construction Dust Assessment (CDA) in order to assess the air quality impacts of dust during construction.	A qualitative assessment of impacts on air quality from construction dust was undertaken in accordance with the DMRB and is included in Chapter 5 of the ES.
Section 5 – Air Quality	There is no reference to the potential impact of additional lighting during the construction phase or when the road is operational. Havering considers that this must also be assessed by an IA using current guidance and methodologies to reduce and minimise the adverse impacts.	The new loop road will be lit with new luminaire with light emitting diode (LED) lighting. The ES considers the impacts of lighting on the environment.
Section 5 – Air Quality	There must be early involvement and consultation with Havering prior to the commencement of the air quality assessment to agree on the methodology which will be followed (e.g. modelling, model verification etc.).	Consultation was held with London Borough of Havering in April 2019 prior to undertaking the air quality assessment.
Section 6 – Noise and Vibration	Havering supports the methodology proposed for the noise and vibration assessments as it includes all the relevant British standards and guidance required for such a project. It is also welcome that locations requiring potential noise mitigation will be reviewed to allow mitigation measures to be incorporated in the design of the scheme. Havering must be involved in this process once such measures are identified in the ES.	The ES has not identified any noise sensitive receptors that require mitigation measures.
Section 7 – Biodiversity	The ES must recognise that the Ingrebourne River and Weald Brook are rivers that flow through the scheme area.	The Ingrebourne River and Weald Brook have been considered within the ES Biodiversity and Road Drainage and

Topic	Comment	Response
		Water Environmental Chapters (Chapters 7 and 8 respectively) and the WFD assessment (application document TR010029/APP/6.7).
Section 7 – Biodiversity	The ES must also recognise that Ingrebourne River is listed as a Site of Metropolitan Importance to Nature. The ES should include details of what measures will be taken in terms of mitigating against habitat loss to the Ingrebourne River.	A geomorphic habitat balance has been included within the WFD compliance assessment (application document TR010029/APP/6.7) to compare the current geomorphic value of the Ingrebourne River with the scheme scenario which includes a range of mitigation. All possible restoration opportunities along the length of the Ingrebourne River within the DCO boundary have been investigated.  Chapter 7 Biodiversity of the ES assesses the impact of the Scheme on Ingrebourne River, and on Ingrebourne Valley Site of Metropolitan Importance for Nature Conservation (SMI). Mitigation measures proposed for the river form part of the proposals to mitigate for the impact of the Scheme on Ingrebourne Valley SMI.
Section 10 – Geology and Soils	Section 10.4.16 states that this is an historical insert landfill site which is correct. This site received waste relating to the M25 construction and the last input of waste was on 01/08/1983. Havering has reviewed its own records, and on site investigation appears to have been undertaken at the site and surroundings.	Further information was requested from Havering Council via email on 14 March 2019 however a reply was received on 01 May 2019 stating the council holds no monitoring data for the site and is not aware of any site investigations having been undertaken. This email is provided in Appendix 10.6 of the ES.
Section 11 – Cultural Heritage	The ES must reflect that Place Services (linked to Essex County Council) provide advice on heritage matters to Havering as well as the other stakeholders identified in para. 7.3.4. Place Services have been engaged to review the Scoping Report for Havering and their comments are set out below (as they were provided to the Council). A primary requirement is the assurance that identified stakeholders will not be consulted in isolation. Any future meetings regarding heritage must include representatives of all	Details on the consultation regarding heritage are provided in the Consultation report (TR010029/APP/5.1).

Topic	Comment	Response
	areas irrespective of local planning authority boundaries to ensure a consistent approach.	
Section 11 – Cultural Heritage	Archaeology, Historic Buildings and Landscape must be considered and consulted together given the interrelation of the disciplines (Ch11.9).	The ES, Chapter 11 considers all heritage assets, including archaeology, built heritage and historic landscape.
Section 11 – Cultural Heritage	Havering is in the process of adopting new criteria for assessing Non-Designated Heritage Assets (NDHAs) for inclusion onto their Local Heritage List. As the Local Heritage List progresses, the Environment Statement (ES) should take into account any new additions adopted from now until the application is submitted. The London Borough of Havering will endeavour to update their Local Heritage List as soon as practically possible to ensure Highways England can conduct a thorough analysis of NDHAs.	The ES, Chapter 11 has considered non-designated heritage assets, including locally designated built heritage. The register of locally important historic buildings was consulted.
Section 11 – Cultural Heritage	The report (Ch11.11.1) notes that additional assets will be considered of low-negligible value. Each heritage asset forms part of the wider historic environment and harm to collective elements will need to be considered holistically.	As-yet, unidentified heritage assets are considered likely to be of low to negligible value, but will be evaluated on an individual basis as part of further identification and evaluation activities outlined in the REAC (application document TR010029/APP/7.3). The ES Chapter 11 includes an assessment of cumulative and residual effects, which considers the historic environment as a whole.
Section 11 – Cultural Heritage	With regards to the proposed study area (Ch11.2), 500m is considered a sufficient distance for Non-Designated Heritage Assets and Grade II listed buildings. Highways England may wish to include a 250m additional buffer zone to enable them to consider the impact of the proposed scheme upon Grade I and II* listed heritage assets within the wider environs.	Extending the buffer zone by 250 m does not result in the inclusion of any additional Grade I or II* listed buildings.

Topic	Comment	Response
Section 11 – Cultural Heritage	In addition to the guidance and policies listed (Ch11.3), Highways England should also reference Historic England Good Practice Advice Note 3: The Setting of Heritage Assets (March 2015).	The ES Chapter 11 includes references to these documents.
Section 11 – Cultural Heritage	Whilst it is acknowledged that the scheme is to improve an existing junction that has already had a significant visual impact on the historic character of the area the assumption (Ch11.4.22) that as a result there will be no additional adverse impacts is inaccurate. Any harm caused will be cumulative in addition to the harm already caused rather than considered independent of it. The applicant should include this within the scoping rather than exclude (Table11.3).	The ES Chapter 11 includes assessments of both cumulative and residual effects on the historic environment.
Section 11 – Cultural Heritage	In addition to the two types of harm identified, Highways England should consider secondary impacts upon heritage assets (Ch11.5.1) such as the potential requirement for secondary/double glazing which may arise as a result of increased noise pollution or the erection of new or taller boundary treatments to screen views. It is important that the impact of increased heavy goods vehicles associated with construction is assessed and access/transport arrangements altered if there is potential for direct harm (Ch11.5.3).	As no significant effects have been identified to the significance of heritage assets through increases in noise levels; as such, secondary impacts have not been considered.
Section 11 – Cultural Heritage	The conclusion that “the operation of the proposed route is not likely to result in permanent significant effects on designated heritage assets” needs to be evidenced further.	The ES Chapter 11 includes the assessments to support the conclusions regarding impacts to the significance of designated heritage assets.
Section 11 – Cultural Heritage	Whilst it is beneficial to have an open dialogue with stakeholders throughout the preapplication/application process, all material for review should be submitted with a minimum two-week consultation period to ensure meaningful discussions.	Comment is duly noted.

Topic	Comment	Response
Section 12 – Materials and Waste	Preparation of the ES must include engagement with the East London Waste Authority as this body is responsible for the management of waste in east London including Havering.	East London Waste Authority handles primarily household waste and recyclable materials. These are anticipated to be generated in the construction phase of the Scheme; however, as this falls within the ECC boundary, it is anticipated that office wastes will be collected by the local waste operator.
Section 13 – People and Communities	As has already been mentioned, a health impact assessment must be undertaken (para. 13.2.13) to help inform the ES.	An assessment on human health is presented in the ES Chapter 13 People and Communities.
Section 15 – Assessment of Cumulative Effects	Section 15.3.2 states that the main source of data for the cumulative effects assessment will be the outcomes and information obtained from the individual environmental topic assessments. This emphasises the importance of having a dedicated chapter for traffic and transport as part of the ES.	Traffic and transport issues are considered fundamentally within the individual ES topic chapters and the traffic modelling, and so subsequently these considerations are inherent within the cumulative and in-combination effects assessments. The sites identified for assessment in the cumulative effects assessment (ES Chapter 15) are informed by their inclusion within the traffic modelling, amongst other factors. Human traveller receptors (which includes motorised and non-motorised traffic within and across the junction) are considered as a receptor in the in-combination effects assessment.
Section 15 – Assessment of Cumulative Effects	Whilst section 15.3.3 states that the cumulative effects associated with noise, air quality and traffic are likely to increase due to the Havering Housing schemes, it needs to be recognised in the ES that sub regional growth needs to be factored into the equation (particularly in relation to air quality and traffic modelling) given that Junction 28 of the M25 is a strategic road.	<p>The cumulative effects assessment in the ES Chapter 15 analyses specific environmental effects, as identified elsewhere in the ES, locally in conjunction with one another and with other nearby development. The methodology (including the scales at which the assessment has been undertaken) follows the approach detailed in PINS Advice Note 17, and is detailed in section 15.5 in Chapter 15.</p> <p>Whilst wider reaching sub-regional growth considerations are recognised and acknowledged in Chapter 15, it is not possible to extend the assessment to cover these considerations, as the depth of supporting planning and environmental information required to undertake the assessment is not available at this scale.</p>

Topic	Comment	Response
Section 15 – Assessment of Cumulative Effects	When considering the impact of the scheme on air quality and traffic as part of the ES, Highways England must liaise with the GLA and TfL to obtain sub regional growth and traffic modelling data which provides information on the impact London Plan growth will have on traffic on strategic roads.	<p>Air quality and traffic are assessed within Chapter 5 of the ES and the Traffic Model respectively. Subsequently, air quality and traffic considerations are inherent within the cumulative effects assessment, as the impacts and receptors which the assessment considers are taken from or informed by these datasets, following the methodology detailed in Chapter 15, section 15.5.</p> <p>The process to develop forecast year scenarios (2022 and 2037) is outlined in Chapter 3 of the Transport assessment (application document TR010029/APP/7.4). The categorisation and schedule process for potential developments was agreed with the local authorities in the vicinity of the Scheme: Brentwood Borough Council, Broxbourne Borough Council, Essex County Council, Hertfordshire County Council, London Borough of Enfield, London Borough of Havering and Transport for London (TfL).</p>
Section 17 – Proposed structure of the Environmental Statement	As stated earlier in this response the ES should have a dedicated section on Traffic and Transport and Monitoring.	A standalone Transport assessment (application document TR010029/APP/7.4) is provided as part of the DCO application documents which assesses the impact of the proposed M25 junction 28 improvement scheme on the strategic and local highway network, road safety and local sustainable methods of transport.

**Table 2.8: Scoping opinion comments – National Grid**

Topic	Comment	Response
Electricity Transmission	National Grid Electricity Transmission has a high voltage electricity overhead transmission line within or in close proximity to the proposed order limits. The overhead line forms an essential part of the electricity transmission network in England and Wales. The details of the	<p>Comment is duly noted. This line has been considered within the design and ES.</p> <p>Meetings have been held with National Grid to explore any concerns and the scheme design amended to ensure that the necessary clearance to the conductors has been achieved and that maintenance access requirements have been provided.</p>



Topic	Comment	Response
	overhead line are shown below: • ZB (275kV) overhead line route	National Grid has advised that they have no objections to the Scheme.
Gas Transmission	National Grid Gas has a high pressure gas transmission pipeline located within or in close proximity to the proposed order limits. The transmission pipeline forms an essential part of the gas transmission network in England, Wales and Scotland: • Feeder Main 18 (Matching Green to Tilbury)	This pipeline runs approximately parallel to the M25 to the east of the motorway. The only works planned at this location are carriageway resurfacing and road markings. There is no direct effect on the pipeline. National Grid has advised that they have no objections to the Scheme.
Electricity infrastructure	National Grid's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset.	Comment is duly noted. The access requirements have been discussed and agreed with National Grid. The easement will remain unchanged.
Electricity infrastructure	Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. National Grid recommends that no permanent structures are built directly beneath overhead lines. These distances are set out in EN 43 – 8 Technical Specification for “overhead line clearances Issue 3 (2004).	Meetings have been held with National Grid to explore any concerns and the Scheme design amended to ensure that the necessary clearance to the conductors has been achieved. National Grid has advised that they have no objections to the Scheme.
Electricity infrastructure	If any changes in ground levels are proposed either beneath or in close proximity to our existing overhead lines then this would serve to reduce the safety clearances for such overhead lines. Safe clearances for existing overhead lines must be maintained in all circumstances.	Meetings have been held with National Grid to explore any concerns and the Scheme design amended to ensure that the necessary clearance to the conductors has been achieved. National Grid has advised that they have no objections to the Scheme.
Electricity infrastructure	The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's ( <a href="http://www.hse.gov.uk">www.hse.gov.uk</a> ) Guidance Note GS 6 “Avoidance of Danger from Overhead Electric Lines” and all relevant site staff should make sure that they are both aware of and understand this guidance.	Comment is duly noted. This information will be passed onto the Principal Contractor.

Topic	Comment	Response
Electricity infrastructure	Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum “sag” and “swing” and overhead line profile (maximum “sag” and “swing”) drawings should be obtained using the contact details above.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Electricity infrastructure	If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Electricity infrastructure	Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) drawings can be obtained using the contact details above.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Electricity infrastructure	National Grid Electricity Transmission high voltage underground cables are protected by a Deed of Grant; Easement; Wayleave Agreement or the provisions of the New Roads and Street Works Act. These provisions provide National Grid full right of access to retain, maintain, repair and inspect our assets. Hence we require that no permanent / temporary structures are to be built over our cables or within the easement strip. Any such proposals should be discussed and agreed with National Grid prior to any works taking place.	Comment is duly noted. This information will be passed onto the Principal Contractor. Meetings have been held with National Grid and the permanent works contractor to explore any concerns. National Grid has advised that they have no objections to the Scheme.
Electricity infrastructure	Ground levels above our cables must not be altered in any way. Any alterations to the depth of our cables will	Comment is duly noted. This information will be passed onto the Principal Contractor.

Topic	Comment	Response
	subsequently alter the rating of the circuit and can compromise the reliability, efficiency and safety of our electricity network and requires consultation with National Grid prior to any such changes in both level and construction being implemented.	Long sections along the line of the conductors through the Scheme design have been shared with National Grid who has advised that they have no objections to the Scheme.
Gas infrastructure	National Grid has a Deed of Grant of Easement for each pipeline, which prevents the erection of permanent temporary buildings, or structures, change to existing ground levels, storage of materials etc.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at previously agreed locations.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. The third party shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	The type of raft shall be agreed with National Grid prior to installation.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	National Grid will need to agree the material, the dimensions and method of installation of the proposed protective measure.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Grid.	Comment is duly noted. This information will be passed onto the Principal Contractor.

Topic	Comment	Response
Gas infrastructure – pipeline crossings	Please be aware that written permission is required before any works commence within the National Grid easement strip.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	A National Grid representative shall monitor any works within close proximity to the pipeline to comply with National Grid specification T/SP/SSW22.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – pipeline crossings	A Deed of Consent is required for any crossing of the easement	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – cable crossings	Cables may cross the pipeline at perpendicular angle to the pipeline i.e. 90 degrees.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – cable crossings	A National Grid representative shall supervise any cable crossing of a pipeline.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – cable crossings	Clearance must be at least 600mm above or below the pipeline.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – cable crossings	Impact protection slab should be laid between the cable and pipeline if cable crossing is above the pipeline.	Comment is duly noted. This information will be passed onto the Principal Contractor.

Topic	Comment	Response
Gas infrastructure – cable crossings	A Deed of Consent is required for any cable crossing the easement.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Gas infrastructure – cable crossings	Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service shall cross below the pipeline with a clearance distance of 0.6 metres.	Comment is duly noted. This information will be passed onto the Principal Contractor.
General Notes on Pipeline Safety:	You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and National Grid's specification for Safe Working in the Vicinity of National Grid High Pressure gas pipelines and associated installations - requirements for third parties T/SP/SSW22.	Comment is duly noted. This information will be passed onto the Principal Contractor.
General Notes on Pipeline Safety:	National Grid will also need to ensure that our pipelines access is maintained during and after construction.	Comment is duly noted. This information will be passed onto the Principal Contractor.
General Notes on Pipeline Safety:	Our pipelines are normally buried to a depth cover of 1.1 metres however; actual depth and position must be confirmed on site by trial hole investigation under the supervision of a National Grid representative. Ground cover above our pipelines should not be reduced or increased.	Comment is duly noted. This information will be passed onto the Principal Contractor.
General Notes on Pipeline Safety:	If any excavations are planned within 3 metres of National Grid High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a National Grid representative. A safe working	Comment is duly noted. This information will be passed onto the Principal Contractor.

Topic	Comment	Response
	method agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.	
General Notes on Pipeline Safety:	Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been confirmed on site under the supervision of a National Grid representative. Similarly, excavation with hand held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with NG supervision and guidance.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Further advice	We would request that the potential impact of the proposed scheme on National Grid's existing assets as set out above and including any proposed diversions is considered in any subsequent reports, including in the Environmental Statement, and as part of any subsequent application.	This information is included in the ES (Chapter 2).
Further advice	Where any diversion of apparatus may be required to facilitate a scheme, National Grid is unable to give any certainty with the regard to diversions until such time as adequate conceptual design studies have been undertaken by National Grid. Further information relating to this can be obtained by contacting the email address below.	Comment is duly noted. This information will be passed onto the Principal Contractor.
Further advice	Where the promoter intends to acquire land, extinguish rights, or interfere with any of National Grid apparatus protective provisions will be required in a form acceptable to it to be included within the DCO.	The only works planned at this location are carriageway resurfacing and road markings. There is no direct effect on the pipeline. National Grid has advised that they have no objections to the scheme.
Further advice	National Grid requests to be consulted at the earliest stages to ensure that the most appropriate protective provisions are included within the DCO application to safeguard the integrity of our apparatus and to remove the	Consultation with National Grid has been ongoing during the preliminary design stage. As the Scheme is not directly affecting National Grid's gas pipeline no directive provisions are required.

Topic	Comment	Response
	requirement for objection. All consultations should be sent to the following email address: box.landandacquisitions@nationalgrid.com	

**Table 2.9: Scoping opinion comments – Public Health England**

Topic	Comment	Response
Human 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 section of the report provides a focus which ensures that public health is given adequate consideration. This 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.	An assessment on human health is presented in the ES Chapter 13 People and Communities. The relevant sections of the NPSNN regarding human health are also noted in the chapter and a full assessment of all sections of the NPSNN is included within the Case for the Scheme (application document TR010029/APP/7.1).
General	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. 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 promoters should fully explain and justify their rationale in the submitted documentation.	Comment duly noted. The ES provides a proportionate approach of assessment of the potential impacts of the Scheme on the environment.



Topic	Comment	Response
Human Health	The EIA should give consideration to best practice guidance such as the Government's Good Practice Guide for EIA. It is important that the EIA identifies and assesses the potential public health impacts of the activities at, and emissions from, the installation. Assessment should consider the development, operational, and decommissioning phases. It is not PHE's role to undertake these assessments on behalf of promoters as this would conflict with PHE's role as an impartial and independent body.	An assessment on human health is presented in the ES Chapter 13 People and Communities.
General Approach	Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, EIA should start at the stage of site and process 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.	An assessment of alternatives is provided in the ES (Chapter 3).
Human Health Receptors	The ES should clearly identify the development's location and the location and distance from the development of offsite human receptors that may be affected by emissions from, or activities at, the development. Off-site human 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. 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.	An assessment on human health is presented in the ES Chapter 13 People and Communities.
Impacts arising from construction	Any assessment of impacts arising from emissions due to construction and decommissioning should consider potential impacts on all receptors and describe monitoring	ES Chapter 13 People and Communities includes an assessment of the impact to the amenity of residential, commercial and community receptors.

Topic	Comment	Response
and decommissioning	and mitigation during these phases. Construction and decommissioning will be associated with vehicle movements and cumulative impacts should be accounted for.	
Impacts arising from construction and decommissioning	We would expect the promoter to follow best practice guidance during all phases from construction to decommissioning to ensure appropriate measures are in place to mitigate any potential impact on health from emissions (point source, fugitive and traffic-related). An effective Construction Environmental Management Plan (CEMP) (and Decommissioning Environmental Management Plan (DEMP)) will help provide reassurance that activities are well managed. The promoter should ensure that there are robust mechanisms in place to respond to any complaints of traffic-related pollution, during construction, operation, and decommissioning of the facility.	Mitigation measures identified through the ES are included in the Outline CEMP (application document TR010029/APP/7.2) which supports the DCO submission.
Emissions to air and water	Significant impacts are unlikely to arise from installations which employ Best Available Techniques (BAT) and which meet regulatory requirements concerning emission limits and design parameters. However, PHE has a number of comments regarding emissions in order that the EIA provides a comprehensive assessment of potential impacts.	The ES describes the potential impacts from the Scheme within each topic chapter (Chapters 5-14).
Emissions to air and water	When considering a baseline (of existing environmental quality) and in the assessment and future monitoring of impacts these: <ul style="list-style-type: none"> <li>• should include appropriate screening assessments and detailed dispersion modelling where this is screened as necessary</li> <li>• should encompass all pollutants which may be emitted by the installation in combination with all pollutants arising from associated development and transport, ideally these should be considered in a single holistic assessment</li> </ul>	As noted in the scoping report, a detailed air quality assessment has been undertaken for the ES Chapter 5 which included dispersion modelling.  The air quality assessment has been undertaken in accordance with the DMRB which required an assessment of the pollutants nitrogen dioxide and fine particles (PM <sub>10</sub> ), which are the key pollutants associated with road vehicles. The air quality assessment considered effects during construction and operation. Decommissioning of road schemes is not considered as it is not a likely scenario.

Topic	Comment	Response
	<ul style="list-style-type: none"> <li>• should consider the construction, operational, and decommissioning phases</li> <li>• should 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</li> <li>• should fully account for fugitive emissions</li> <li>• should include appropriate estimates of background levels</li> <li>• should 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)</li> <li>• should include consideration of local authority, Environment Agency, Defra national network, and any other local site-specific sources of monitoring data</li> <li>• should compare predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as UK Air Quality Standards and Objectives and Environmental Assessment Levels)               <ul style="list-style-type: none"> <li>— If no standard or guideline value exists, the predicted exposure to humans should be estimated and compared to an appropriate health-based value (a Tolerable Daily Intake or equivalent). Further guidance is provided in Annex 1</li> <li>— 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</li> </ul> </li> <li>• should 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</li> </ul>	<p>The air quality assessment was undertaken in accordance with the DMRB, and standard emissions factors datasets. The detailed assessment includes consideration of traffic data over peak periods.</p> <p>Background concentrations were taken from DEFRA's background maps.</p> <p>The air quality assessment used traffic data from the traffic model which includes traffic from other committed developments in the wider area.</p> <p>Emissions from sources other than the scheme are taken into account within DEFRA's background maps.</p> <p>The air quality assessment considered monitoring data from local authorities, DEFRA and other locally available data.</p> <p>The air quality assessment includes estimates of pollutant concentrations at selected receptors and a comparison of the estimated concentrations with the relevant air quality criteria, including the national air quality objectives.</p> <p>The air quality assessment includes relevant sensitive receptors within the study area including residential areas. Consultation was held with local authorities to identify any additional receptors including those from future development which should be included in the assessment.</p> <p>The HAWRAT model provided the guidance on the assessment of likely significance of effects on surface water quality discharge associated with this highway scheme. This considered the potential operational runoff discharge associated with metals, namely copper and zinc and sediment associated with road drainage. Existing / background discharges were considered and compared against proposed scheme discharges. Both discharge scenarios (existing and proposed) were compared against</p>

Topic	Comment	Response
	affected by emissions, this should include consideration of any new receptors arising from future development	<p>published Environmental Quality Standards (EQS). In the absence of data parameters (e.g. river flow) conservative data were adopted. The results are presented in the ES Chapter 8.</p> <p>The cumulative effects of multiple drainage outfalls on a single receiving watercourse have been assessed and the results are presented in the ES Chapter 8. Equally, the cumulative impacts arising where more than one Scheme is under construction have been assessed as part of the ES and the results are presented in the ES Chapter 8. Appropriate mitigation has been proposed for water quality where required.</p>
Emissions to air and water	Whilst screening of impacts using qualitative methodologies is common practice (e.g. 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.	<p>The assessment of dust emissions is a qualitative one, given that the quantity of dust emitted will be related to the level and type of construction activity. The meteorological conditions at the time of the construction activity will also affect the dust emissions. The construction dust assessment (Chapter 5) therefore identifies locations where there is likely to be an adverse effect.</p> <p>A quantitative assessment (Chapter 5) of the air quality effects from changes in vehicle emissions during operation has been undertaken.</p> <p>The HAWRAT model provided the guidance on the assessment of likely significance of effects on surface water quality discharge associated with this highway scheme. This model is based on quantitative data inputs and provided quantitative outputs that could be compared with appropriate standards - namely the Environmental Quality Standards (EQS) of copper and zinc concentrations that are set to protect the environment under the Water Framework Directive.</p>

Topic	Comment	Response
Emissions to air and water	<p>PHE's view is that the EIA 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.</p>	<p>The air quality assessment in the ES Chapter 5 includes estimated concentrations of air pollutants at selected receptors, and notes whether there are any exceedances of relevant air quality criteria during the operational phase for both the short and long term. The air quality assessment showed that no mitigation measures were required during operation.</p> <p>During construction, there may be fugitive emissions of dust, although there are no national standards or guidelines set for dust deposition, given that it is related to amenity rather than health effects.</p> <p>Examples of typical mitigation measures during construction to control dust are provided in the air quality chapter of the ES Chapter 5. The actual measures would be documented in the CEMP. With the application of suitable mitigation measures, dust emissions would be minimised such that there should not be a significant adverse effect.</p> <p>Both construction and operational mitigation measures to control potential of surface water quality pollution are presented in the ES Chapter 8. The HAWRAT model was used to predict likely concentrations of contaminants likely to be discharged from the Scheme which could be compared against the appropriate EQS. As no significant effects on surface water features have been identified, no significant effects on licenced abstractions or consented discharges are predicted</p>
Emissions to air and water – additional points specific to emissions to air	<p>When considering a baseline (of existing air quality) and in the assessment and future monitoring of impacts these:</p> <ul style="list-style-type: none"> <li>• should include consideration of impacts on existing areas of poor air quality e.g. existing or proposed local authority Air Quality Management Areas (AQMAs)</li> </ul>	<p>The air quality assessment in the ES Chapter 5 included a consideration of AQMAs.</p> <p>The air quality assessment used appropriate meteorological data from the nearby meteorological station at London City Airport (18.5 km from the Scheme). Data</p>

Topic	Comment	Response
	<ul style="list-style-type: none"> <li>• should include modelling using appropriate meteorological data (i.e. come from the nearest suitable meteorological station and include a range of years and worst case conditions)</li> <li>• should include modelling taking into account local topography</li> </ul>	<p>for the base year of 2015 was used in the assessment as this was the base year for the traffic model.</p> <p>A dispersion model was used for the air quality assessment, however topography was not taken into account, but assumed to be flat, which is the usual approach when modelling emissions from road sources.</p>
Emissions to air and water – additional points specific to emissions to water	<p>When considering a baseline (of existing water quality) and in the assessment and future monitoring of impacts these:</p> <ul style="list-style-type: none"> <li>• should include assessment of potential impacts on human health and not focus solely on ecological impacts</li> <li>• should identify and consider all routes by which emissions may lead to population exposure (e.g. surface watercourses; recreational waters; sewers; geological routes etc.)</li> <li>• should assess the potential off-site effects of emissions to groundwater (e.g. on aquifers used for drinking water) and surface water (used for drinking water abstraction) in terms of the potential for population exposure</li> <li>• should include consideration of potential impacts on recreational users (e.g. from fishing, canoeing etc) alongside assessment of potential exposure via drinking water</li> </ul>	<p>The assessment process for water included the assessment of baseline including all environmental receptors, some of which relate to human consumption/health. The standards used to assess impact were EQSs which are designed to protect the most sensitive aquatic organisms and are many times more stringent than drinking water standards. Using these metrics, as no significant effects on surface water features have been identified, no significant effects on licenced abstractions or consented discharges are predicted. With this in mind, it can be inferred there would be negligible impact on human health associated with surface water quality</p>
Land Quality	<p>We would expect the promoter to provide details of any hazardous contamination present on site (including ground gas) as part of the site condition report.</p>	<p>Noted. Potential sources of contamination within the Scheme and study area were identified and listed in the PEIR. The preliminary ground investigation was carried out within a historical landfill and an area considered potentially contaminated as a result of visual observations from a site walkover. Samples were collected and analysed and ground gas monitoring wells were installed during the preliminary ground investigation (detailed from paragraph 10.7.58). With regards to the presence of hazardous waste,</p>



Topic	Comment	Response
		<p>this has been covered in Chapter 12 of the ES (Materials and Waste).</p> <p>The main ground investigation and monitoring data from the preliminary GI monitoring wells will provide further data on soil and ground conditions, and further monitoring wells will be installed. Subsequent ground gas monitoring and risk assessments will be carried out to confirm/update the design and mitigation measures listed in Chapter 10, section 10.9 of the ES.</p>
Land Quality	<p>Emissions to and from the ground should be considered in terms of the previous history of the site and the potential of the site, 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 and the potential impact on nearby receptors and control and mitigation measures should be outlined. Relevant areas outlined in the Government's Good Practice Guide for EIA include:</p> <ul style="list-style-type: none"> <li>• effects associated with ground contamination that may already exist</li> <li>• effects associated with the potential for polluting substances that are used (during construction / operation) to cause new ground contamination issues on a site, for example introducing / changing the source of contamination</li> <li>• impacts associated with re-use of soils and waste soils, for example, re-use of site-sourced materials on-site or offsite, disposal of site-sourced materials offsite, importation of materials to the site, etc.</li> </ul>	<p>Emissions to and from the ground have been considered in terms of potentially contaminative past and current land uses within the Scheme and 250m radius and are listed from paragraph 10.7.63 in the ES.</p> <p>Public health impacts associated with ground contamination including the migration of contaminants to on-site and off-site receptors has been assessed. The potential impacts on receptors are listed from paragraph 10.8.2 and proposed control and mitigation measures have been outlined in section 10.9.</p> <p>Effects associated with the potential for polluting substances to be used during construction and ways this will be managed are discussed from paragraph 10.9.7 in the ES. The risk assessment and impact assessment for land contamination (Tables 10.15 and 10.16) of the ES considers the risks during the construction phase as well as the operational phase. The REAC outlines the commitments to good practice during construction (including alignment with the Environment Agency's Pollution Prevention Guidelines and applying Best Available Techniques).</p> <p>Impacts associated with re-use of soils and waste soils, for example, re-use of site-sourced materials on-site or offsite, disposal of site-sourced materials offsite, importation of</p>



Topic	Comment	Response
		<p>materials to the site, etc is assessed in the Materials and Waste Chapter (Chapter 12).</p> <p>The potential for pollution to occur during the operational phase of the Scheme is assessed in the Road Drainage and Water Environment Chapter (Chapter 8).</p>
Waste	<p>The EIA should demonstrate compliance with the waste hierarchy (e.g. with respect to re-use, recycling or recovery and disposal). For wastes arising from the installation the EIA should consider:</p> <ul style="list-style-type: none"> <li>• the implications and wider environmental and public health impacts of different waste disposal options</li> <li>• disposal route(s) and transport method(s) and how potential impacts on public health will be mitigated</li> </ul>	Chapter 12 of the ES includes the waste hierarchy as part of the assessment and this has been considered as part of mitigation and enhancement measures.
Waste	Within the EIA PHE would expect to see information about how the promoter 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 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.	Comment is duly noted.
Waste	The EIA should include consideration of 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 2009: both in terms of their applicability to the installation itself, and the installation's potential to impact on, or be impacted by, any nearby installations themselves subject to the these Regulations.	Comment is duly noted.

Topic	Comment	Response
Other aspects	There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report, jointly published by Liverpool John Moores University and the 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 EIAs as good practice.	An assessment of human health is included in ES Chapter 13 People and Communities.
Electromagnetic fields (EMF)	This statement is intended to support planning proposals involving 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 in the following link: <a href="https://www.gov.uk/government/collections/electromagnetic-fields#low-frequencyelectric-and-magnetic-fields">https://www.gov.uk/government/collections/electromagnetic-fields#low-frequencyelectric-and-magnetic-fields</a> There is a potential health impact associated with the electric and magnetic fields around substations, and power lines and cables. The field strength tends to reduce with distance from such equipment.	No overhead powerlines or substations are being added or moved as part of the Scheme so there is no change in Electro-Magnetic Field (EMF) exposure on communities living around the Scheme.
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	No overhead powerlines or substations are being added or moved as part of the Scheme so there is no change in Electro-Magnetic Field (EMF) exposure on communities living around the Scheme.

Topic	Comment	Response
	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 the field. 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 the basic restrictions and reducing the risk of indirect effects.	No overhead powerlines or substations are being added or moved as part of the Scheme so there is no change in Electro-Magnetic Field (EMF) exposure on communities living around the Scheme.
EMF - Long term effects	There is concern about the possible effects of long-term exposure to electromagnetic fields, including possible carcinogenic effects at levels much lower than those given in the ICNIRP guidelines. In the NRPB advice issued in 2004, it was concluded that the studies that suggest health effects, including those concerning childhood leukaemia, 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	No overhead powerlines or substations are being added or moved as part of the Scheme so there is no change in Electro-Magnetic Field (EMF) exposure on communities living around the Scheme.

Topic	Comment	Response
	measures, particularly with respect to the exposure of children to power frequency magnetic fields.	
Human health risk assessment (chemical pollutants)	<p>The points below are cross-cutting and should be considered when undertaking a human health risk assessment:</p> <ul style="list-style-type: none"> <li>• The promoter should consider including Chemical Abstract Service (CAS) numbers alongside chemical names, where referenced in the ES</li> <li>• Where available, the most recent United Kingdom standards for the appropriate media (e.g. 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, those recommended by the European Union or World Health Organisation can be used</li> <li>• When assessing the human health risk of a chemical emitted from a facility or operation, the background exposure to the chemical from other sources should be taken into account</li> <li>• 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 'Margin of Exposure' (MOE) approach is used.</li> </ul>	The assessment of human health is included within Chapter 13 of the ES relating to People and Communities.

**Table 2.10: Scoping opinion comments – Royal Mail**

Topic	Comment	Response
General	Royal Mail is responsible for providing efficient mail sorting and delivery nationally. As the Universal Service Provider	Your comments are duly noted.

Topic	Comment	Response									
	<p>under the Postal Services Act 2011, Royal Mail has a statutory duty to deliver mail to every residential and business address in the country as well as collecting mail from all Post Offices and post boxes six days a week.</p> <p>Royal Mail's postal sorting and delivery operations rely heavily on road communications. Royal Mail's ability to provide efficient mail collection, sorting and delivery to the public is sensitive to changes in the capacity of the highway network.</p> <p>Royal Mail is a major road user nationally. Disruption to the highway network and traffic delays can have direct consequences on Royal Mail's operations, its ability to meet the Universal Service Obligation and comply with the regulatory regime for postal services thereby presenting a significant risk to Royal Mail's business.</p> <p>Royal Mail therefore wishes to ensure the protection of its future ability to provide an efficient mail sorting and delivery service to the public in accordance with its statutory obligations which may potentially be adversely affected by the construction of this proposed road scheme.</p> <p>Royal Mail's has ten operational properties within 12 miles of the proposed M25 Junction 28 improvement scheme as listed and shown on plan below:</p> <table border="1"> <tr> <td>Brentwood Vehicle Park</td><td>William Hunter Way, Brentwood CM14 4SS</td><td>1.6 miles</td></tr> <tr> <td>Brentwood Delivery Office</td><td>30 High Street, Brentwood CM14 4AA</td><td>1.8 miles</td></tr> <tr> <td>Harold Hill Delivery Office</td><td>Trowbridge Road, Romford RM3 8YN</td><td>2.6 miles</td></tr> </table>	Brentwood Vehicle Park	William Hunter Way, Brentwood CM14 4SS	1.6 miles	Brentwood Delivery Office	30 High Street, Brentwood CM14 4AA	1.8 miles	Harold Hill Delivery Office	Trowbridge Road, Romford RM3 8YN	2.6 miles	
Brentwood Vehicle Park	William Hunter Way, Brentwood CM14 4SS	1.6 miles									
Brentwood Delivery Office	30 High Street, Brentwood CM14 4AA	1.8 miles									
Harold Hill Delivery Office	Trowbridge Road, Romford RM3 8YN	2.6 miles									

Topic	Comment			Response
	Hornchurch Delivery Office	154 Abbs Cross Gardens, Hornchurch RM12 4AZ	5.3 miles	
	Romford Mail Centre	Queen Elizabeth House, Romford RM7 0AB	5.8 miles	
	Romford Crow Lane Vehicle Park	Crow Lane, Romford RM7 0EP	6.0 miles	
	Upminster Delivery Office	58 Corbets Tey Road, Upminster RM14 2AS	6.3 miles	
	Billericay Delivery Office	135 High Street, Brentwood CM12 9AA	7.2 miles	
	Basildon Vehicle Park	Great Oaks, Basildon SS14 1AH	11.4 miles	
	Basildon Delivery Office	25 East Square, Basildon SS14 1AA	11.8 miles	
General	<p>The M25 and A12 are both strategically important distribution routes for Royal Mail operational traffic. Also, in exercising its statutory duties Royal Mail vehicles use on a daily basis all of the local roads that may potentially be affected by additional traffic arising from the construction of the proposed junction improvements.</p> <p>It is envisaged that the proposed M25 Junction 28 improvements will, once constructed, reduce congestion</p>			Comment is duly noted. Traffic management measures are outlined in the ES (Chapter 2) and disruption to the road network will be minimised as far as possible.

Topic	Comment	Response
	which will have benefits for Royal Mail operational traffic movements. However, Royal Mail is concerned about the potential for disruption to its operations during the construction phase. In particular, Royal Mail requires more information and certainty about traffic management measures that will be put in place to mitigate construction impacts on traffic flows on the M25 and A12	
General	The ES should include information on the needs of major road users (such as Royal Mail) and acknowledge the requirement to ensure that major road users are not disrupted though full advance consultation by the applicant at the appropriate time in the DCO and development process.	Comment is duly noted. Traffic management measures are outlined in the ES (Chapter 2) and disruption to the road network will be minimised as far as possible.
General	The ES and DCO application should include detailed information on the construction traffic mitigation measures that are proposed to be implemented by Highways England / its contractor, including a draft Construction Traffic Management Plan (CTMP).	Comment is duly noted. Traffic management measures are outlined in the ES (Chapter 2) and disruption to the road network will be minimised as far as possible.
General	Royal Mail is fully pre-consulted by Highways England / its contractor on any proposed road closures / diversions/ alternative access arrangements, hours of working and the content of the CTMP. The ES should acknowledge the need for this consultation with Royal Mail and other relevant major road users.	Comment is duly noted.

**Table 2.11: Scoping opinion comments – Environment Agency**

Topic	Comment	Response
General	Overall we were satisfied that the correct environmental issues has been scoped into the report. We have made some detailed comments on the content which may be of use to the applicant.	Comment is duly noted.



Topic	Comment	Response
Biodiversity	We had no specific comments to make at this stage. However, we have given advice at the pre-application stage on Water Framework Directive requirements and assessment measures required. We expect environmental improvements from a scheme of this size to the main watercourses affected by the scheme, in addition to any mitigation / compensation measures required.	A geomorphic habitat balance assessment has been included within the WFD compliance assessment (application document TR010029/APP/6.7) to assess potential effects on the water environment. The habitat balance compares the current habitat value to the scheme scenario, which does include various forms of mitigation.
Road drainage and water environment	Overall we are satisfied that the scoping report includes most of our requirements on the management of flood risk. However, the Local Authorities Strategic Flood Risk Assessment would be a useful source of information but we couldn't see this referenced in the report. We would seek a reduction in flood risk rather than a confirmation that the development would not make the current situation worse. In that regard, we recommend that opportunities to reduce flood risk are considered in accordance with the National Planning Policy Framework and associated Planning Practice Guidance on flood risk and climate change.	The document has been referenced and included within the ES Chapter 8. Reduction in flood risk was considered within the design of the scheme, outlined in the FRA (application document TR010029/APP/6.6).
Climate Change and Flood Risk	We published climate change allowances in February 2016 on our website 'Flood Risk Assessments: Climate Change Allowances' and this guidance should be used as a baseline in any assessment of climate change on flood risk.	This was used as a baseline in the assessment in the Climate chapter (Chapter 14).
Geology and Soils	The scoping report sets out the approach to determining risks to controlled waters that may arise during the construction and operation of the moved junction. We are comfortable that this meets our requirements with regards to contaminated land/groundwater legislation.	Comment is duly noted.
Geology and Soils	We understand that some limited ground investigation works have been completed at the site. Part of the proposed development site (Brook Street Landfill and in filled historical ponds) is potentially affected by contamination and as such	Noted. A preliminary ground investigation has been carried out in the area of the historical Brook Street Landfill and data have been displayed and assessed within the ES (Appendix 10.1 and paragraph 10.7.58 respectively). Piling

Topic	Comment	Response
	additional ground investigation and environmental risk assessment will be required for this arena (this is recognised in the scoping report). Given the likely requirement for deep foundations a piling risk assessment will also be required.	Risk Assessments will be produced once further final data are available from the main ground investigation currently being carried out. Any risk assessments will be submitted to the relevant bodies for review prior to the commencement of any proposed construction.
Materials and Waste	This document identifies all the relevant legislation and controls which will need to be applied to complete the scheme. However, it has omitted that where controlled waste is recovered or reused on site it will require an environmental permit. This may be due to <i>'baseline data relating to operational material resource use and waste generated by highway schemes is not readily available'</i> which is understandable at this stage of the project. We agree that <i>'operational material resource use and waste arisings cannot be estimated and as such a quantitative assessment will not be undertaken.'</i>	The Environmental Permitting Regulations are listed in the legislation, regulatory and policy framework in Chapter 12 of the ES.
Materials and Waste	Once a material balance calculations have been produced (possibly to support the planning application/DCO), the applicant will have a better idea of the volume of material required to deliver the scheme. This should also give an indication as to the quantity of controlled waste which will be disturbed from the historic landfill areas. The redeposit of this controlled waste would require an Environmental Permit even where it is suitable for reuse without further treatment. If the project needs to treat material prior to redeposit a site based Environmental Permit could incorporate the processing of this material along with the redeposit and recovery to deliver the landform required. Once complete the Environmental Permit could be surrendered so there would be no on-going liability following the works.	The balance calculation and preliminary assessment of materials from the historic landfill area are presented in Chapter 12 of the ES. It is not anticipated that waste treatment will be required at the site; however, should circumstances change and activities require an environmental permit, this will be undertaken in line with the Environmental Permitting Regulations as presented in Chapter 12 of the ES.

**Table 2.12: Scoping opinion comments – London Borough of Bexley**

Topic	Comment	Response
	I can advise you that this Authority has no comments to make on the scope of the environmental statement.	Comment is duly noted.

© Crown copyright (2020).

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence:

visit [www.nationalarchives.gov.uk/doc/open-government-licence/](http://www.nationalarchives.gov.uk/doc/open-government-licence/)

write to the Information Policy Team, **The National Archives, Kew, London TW9 4DU**,

or email [psi@nationalarchives.gsi.gov.uk](mailto:psi@nationalarchives.gsi.gov.uk).

Printed on paper from well-managed forests and other controlled sources.

Registered office Bridge House, 1 Walnut Tree Close, Guildford GU1 4LZ

Highways England Company Limited registered in England and Wales number 09346363

