

# A12 Chelmsford to A120 widening scheme

**TR010060**

## **6.3 ENVIRONMENTAL STATEMENT**

### **APPENDIX 5.1 SCOPING OPINION RESPONSE TABLE**

APFP Regulation 5(2)(a)

Planning Act 2008

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

Volume 6

August 2022

Infrastructure Planning

Planning Act 2008

**A12 Chelmsford to A120 widening scheme**  
Development Consent Order 202[ ]

**ENVIRONMENTAL STATEMENT**  
**APPENDIX 5.1 SCOPING OPINION RESPONSE TABLE**

<b>Regulation Reference</b>	Regulation 5(2)(a)
<b>Planning Inspectorate Scheme Reference</b>	TR010060
<b>Application Document Reference</b>	TR010060/APP/6.3
<b>Author</b>	A12 Project Team & National Highways

<b>Version</b>	<b>Date</b>	<b>Status of Version</b>
Rev 1	August 2022	DCO Application

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# 1 Scoping Opinion response table

1.1.1 A Scoping Opinion was sought from the Planning Inspectorate in October 2020. An Environmental Scoping Report was submitted to the Planning Inspectorate by National Highways (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017. It set out the proposed scope of works and methods to be applied in carrying out the Environmental Impact Assessment (EIA), as well as the proposed structure and contents of the Environmental Statement. A Scoping Opinion was received from the Planning Inspectorate on 7 December 2020 and republished with an errata sheet on 15 March 2021. Tables 1.1 to 1.18 contain National Highway's responses to the comments in the Scoping Opinion.

1.1.2 The following consultees responded to the Planning Inspectorate's request but had no comments to make in relation to the proposed scheme:

- Babergh District Council
- Brentwood Borough Council
- Cambridgeshire County Council
- Enfield Council
- Health and Safety Executive
- London Borough of Redbridge
- Medway Council
- Mid Suffolk and Babergh District Councils
- Ministry of Defence
- National Grid Electricity Transmission plc (NGET) and National Grid Gas plc (NGG)
- Office for Nuclear Regulation
- Southend-on-Sea Borough Council
- Tendring District Council
- West Suffolk Council

Table 1.1 Scoping Opinion comments and responses

Scoping Opinion ID	Scoping Opinion comment	National Highways response
<b>Introduction</b>		
1.1.10/11	The Inspectorate considers that this '(a) a plan sufficient to identify the land; (b) a description of the proposed scheme, including its location and technical capacity; (c) an explanation of the likely significant effects of the development on the environment; and (d) such other information or representations as the person making the request may wish to provide or make.)' has been provided in the Applicant's Scoping Report. The Inspectorate is satisfied that the Scoping Report encompasses the relevant aspects identified in the EIA Regulations.	Noted.
1.1.13	The Inspectorate notes the potential need to carry out an assessment under The Conservation of Habitats and Species Regulations 2017. This assessment must be co-ordinated with the EIA in accordance with Regulation 26 of the EIA Regulations. The Applicant's Environmental Statement should therefore be co-ordinated with any assessment made under the Habitats Regulations.	Following a Stages 1 and 2 Screening Exercise, a Stage 3 report has been presented as Habitats Regulations Assessment: No Significant Effects Report [TR010060/APP/6.8] and is coordinated with the Environmental Statement [TR010060/APP/6.1].
1.2.3	The Environmental Statement submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies. It is recommended that a table is provided in the Environmental Statement summarising the scoping responses from the consultation bodies and how they are, or are not, addressed in the Environmental Statement.	This Appendix 5.1: Scoping Opinion Response Table [TR010060/APP/6.3] summarises the scoping responses from the consultation bodies and how they have been addressed in the Environmental Statement [TR010060/APP/6.1].
<b>The proposed scheme</b>		
2.3.2	The description of the proposed scheme within Table 2.3 of the Scoping Report is not accompanied by any figures and lacks design details of key features such as locations and configurations of junctions, roundabouts, bridges and abutments. No visualisations, such as photomontages, 3D models or wireframe images have been provided. There are few specific indications provided as to which areas will be utilised for environmental mitigation, borrow pits, construction compounds, material storage, and other purposes. Descriptions of such key details and impacts should be expanded and refined within the Environmental Statement.	<p>The scheme description in the Environmental Scoping Report was based on an early design. The scheme description provided in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] provides a detailed description of the permanent and temporary (construction) elements of the proposed scheme.</p> <p>The proposed scheme design, including mitigation, is shown visually on the Environmental Masterplan, which is Figure 2.1 of the Environmental Statement [TR010060/APP/6.2]. Temporary elements of the proposed scheme, including construction compounds and haul roads, are shown on Figure 2.3 of the Environmental Statement [TR010060/APP/6.2].</p> <p>Photomontages are included in Figure 8.5 of the Environmental Statement [TR010060/APP/6.2].</p> <p>The assessment of impacts in Chapters 6 to 15 of the Environmental Statement is based on the scheme description provided in Chapter 2 [TR010060/APP/6.1].</p>
2.3.3	<p>Additionally, the Environmental Statement should include sufficient information on the following matters to provide a complete understanding of design and environmental impacts of the proposed scheme:</p> <ul style="list-style-type: none"> <li>The Scoping Report mentions that demolition works will be required for bridges and residential properties, but no details are provided.</li> <li>The Scoping Report does not provide sufficient detail regarding the extent of impacts associated with severance on the road network, public right of ways (PRoW) and access to residential, commercial and agricultural properties arising from the proposed scheme to be fully understood.</li> <li>The Scoping Report does not state the locations or dimensions of the construction compounds, temporary offices, laydown areas, or haul roads. It is not stated if the construction compounds and temporary offices will require connection to utilities or any environmental impacts that may arise from connecting these sites to utilities.</li> <li>The Scoping Report does not state the total area of land required for the proposed scheme.</li> </ul>	<p>Section 2.5 of Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1], provides details of the bridges and buildings that need to be demolished to accommodate the proposed scheme.</p> <p>Section 2.5 of Chapter 2 [TR010060/APP/6.1] describes the proposals for walker, cyclist and horse rider (WCH) provision. Impacts on severance and access are assessed in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1].</p> <p>Section 2.6 of Chapter 2 [TR010060/APP/6.1] provides details on the construction methodology, including compounds, temporary offices, laydown areas and haul roads.</p> <p>Section 2.5 of Chapter 2 [TR010060/APP/6.1] provides the total land take for the proposed scheme.</p> <p>A description of utility diversions is provided in Section 2.5 of Chapter 2 [TR010060/APP/6.1]. Utility diversions have been assessed within Chapters 6 to 15 of the Environmental Statement and included within the proposed scheme Development Consent Order (DCO) application. The diversion of a high-pressure gas main (the 'gas main diversion') owned and operated by Cadent gas Limited (Cadent) would give rise to likely significant effects and would therefore be an NSIP in its own right. The Environmental Statement has therefore considered the Overarching National Policy Statement for</p>

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	<ul style="list-style-type: none"> <li>The Scoping Report paragraph 2.4.16 states that utilities including gas main and high voltage power lines would be affected, but limited information is provided that describes the construction activities associated with these works, or the environmental impact of these works. The Inspectorate notes that the Applicant assumes that environmental assessment associated with these works will be undertaken by a third party, but if these works are required for the functionality of the proposed scheme, the impacts associated with these works should be included within the Environmental Statement. The Environmental Statement should include a clear description of all the elements that comprise the proposed scheme, including any elements that may be necessary to enable the delivery of the proposed scheme but may also comprise individual nationally significant infrastructure projects (NSIPs) in their own right (e.g. power line diversions).</li> </ul>	Energy (EN-1) and National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) in relation to the gas main diversion.
2.3.4	The Inspectorate notes that the distances between the proposed scheme and receptors stated in the Scoping Report are inaccurate in some instances e.g. paragraph 8.4.8 which states that the Grade II Terling Place Registered Park and Gardens is located 1.8km from the proposed scheme but it is actually located approximately 910m from the proposed scheme. The Applicant should ensure that accurate distances between receptors and the proposed scheme are reported in the Environmental Statement and relevant aspect chapters.	The locations of receptors in relation to the proposed scheme have been checked and amended where appropriate within Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
2.3.5	The Scoping Report has provided limited information on how the traffic and transport model will be undertaken, and no information on construction traffic has been provided. This information should be provided within the Environmental Statement or included within a standalone traffic and transport assessment that links to the technical chapters within the Environmental Statement.	A summary of the main traffic flow changes is provided in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1]. A summary of the traffic model methodology is provided in Chapter 5: Environmental assessment methodology [TR010060/APP/6.1]. A Transport Assessment [TR010060/APP/7.2] and Combined Modelling and Appraisal Report [TR010060/APP/7.3] have also been produced for the DCO application, which include technical information on the traffic modelling.
2.3.7	The Inspectorate acknowledges the Applicant's intention to consider alternatives within the Environmental Statement. The Inspectorate would expect to see a discrete section in the Environmental Statement that provides details of the reasonable alternatives studied and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects. The Scoping Report considers alternatives in Chapter 3.	Chapter 3: Assessment of alternatives, of the Environmental Statement [TR010060/APP/6.1] provides a description of the design alternatives that were considered during the options identification and selection process. This includes a description of why the preferred option was selected. Chapter 3 also details design alternatives that were considered once the preferred option was selected (i.e. alternative ways of delivering the proposed scheme). The environmental considerations of these design alternatives have been described.
2.3.9	The Applicant should make every attempt to narrow the range of options and explain clearly in the Environmental Statement which elements of the proposed scheme have yet to be finalised and provide the reasons. At the time of application, any proposed scheme parameters should not be so wide-ranging as to represent effectively different developments. The development parameters should be clearly defined in the draft DCO and in the accompanying Environmental Statement. It is a matter for the Applicant, in preparing an Environmental Statement, 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 scheme in the Environmental Statement must not be so wide that it is insufficiently certain to comply with the requirements of Regulation 14 of the EIA Regulations.	No discreet options have been assessed in the Environmental Statement. There are other elements of the proposed scheme that require a degree of flexibility. Limits of deviation have been described in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] and are shown visibly on the Works Plans [TR010060/APP/2.2].
2.3.10	It should be noted that if the proposed scheme materially changes prior to submission of the DCO application, the Applicant may wish to consider requesting a new scoping opinion.	Design changes have been consulted on through the statutory consultation process, as well as through supplementary and targeted consultation, as summarised in Chapter 4: Consultation, of the Environmental Statement [TR010060/APP/6.1] and described in full in the Consultation Report [TR010060/APP/5.1]. A new Scoping Opinion has not been requested. However, stakeholder feedback from the statutory/supplementary/targeted consultations has been considered.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
<b>Environmental Statement approach</b>		
3.1.4	The Inspectorate considers that Applicants should make effort to ensure that they engage effectively with consultation bodies and where necessary further develop the scope of the Environmental Statement to address their concerns and advice. The Environmental Statement should include information to demonstrate how such further engagement has been undertaken and how it has influenced the scope of the assessments reported in the Environmental Statement.	<p>Consultation with the planning authorities and statutory environmental bodies was formally undertaken through the scoping and statutory consultation processes. Each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) includes a description of the feedback received from consultees in the Scoping Opinion and from the statutory consultation, as well as how this feedback has been addressed in the Environmental Statement. Full responses to the Scoping Opinion and statutory consultation are provided in this appendix and in Annex N of the Consultation Report [TR010060/APP/5.2], respectively.</p> <p>Technical consultation has also been regularly undertaken with consultees to discuss scope, methodology, impacts and mitigation. Details of this informal consultation is provided in Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1].</p>
3.1.5	Where relevant, the Environmental Statement should provide reference to how the delivery of measures proposed to prevent/minimise adverse effects is secured through draft DCO requirements (or other suitably robust methods) and whether relevant consultation bodies agree on the adequacy of the measures proposed.	Each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) describes the proposed mitigation, as well as how this mitigation will be secured in the draft DCO. Mitigation is further detailed in the Register of Environmental Actions and Commitments, which is included in the first iteration of the Environmental Management Plan [TR010060/APP/6.5].
3.3.1	<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>to demonstrate how the assessment has taken account of this Scoping Opinion</li> <li>to identify and collate the residual effects after mitigation for each of the aspect chapters, including the relevant interrelationships and cumulative effects</li> <li>to set out the proposed mitigation and/or monitoring measures including cross-reference to the means of securing such measures (e.g. a draft DCO requirement)</li> <li>to describe any remedial measures that are identified as being necessary following monitoring</li> <li>to identify where details are contained in the Habitats Regulations Assessment (HRA report) (where relevant), such as descriptions of European sites and their locations, together with any mitigation or compensation measures, are to be found in the Environmental Statement.</li> </ul>	<p>This Appendix 5.1 provides the Scoping Opinion response table to demonstrate how the assessment has taken into the account the scoping opinion.</p> <p>A summary of likely significant residual effects is included at the end of each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) and these are collated in a table in Chapter 17: Summary [TR010060/APP/6.1].</p> <p>Mitigation is described in each aspect chapter of the Environmental Statement [TR010060/APP/6.1]. Mitigation is tabulated in the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5]. This includes information on how mitigation will be secured.</p> <p>Where likely significant effects have been identified, monitoring measures have been considered, including consideration of remediation measures (where relevant). Monitoring measures are included in each aspect chapter of the Environmental Statement [TR010060/APP/6.1] and in the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5].</p> <p>The Habitats Regulations Assessment: No Significant Effects Report [TR010060/APP/6.8] is provided in the DCO application and includes tables to describe the relevant European sites and their locations, together with any mitigation or compensation measures.</p>
3.3.2	The Inspectorate considers that where a DCO application includes works described as 'Associated Development', that could themselves be defined as an improvement of a highway, the Applicant should ensure that the Environmental Statement accompanying that application distinguishes between effects that primarily derive from the integral works which form the proposed (or part of the proposed) NSIP and those that primarily derive from the works described as Associated Development. This could be presented in a suitably compiled summary table. This will have the benefit of giving greater confidence to the Inspectorate that what is proposed is not in fact an additional NSIP defined in accordance with s22 of the PA2008.	No works are described as 'associated development' within the proposed scheme DCO application. The Environmental Statement has been based on the proposed scheme as a whole, as described in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1]. The gas main diversion is considered an NSIP in its own right, but has been assessed as part of the wider proposed scheme (with consideration of the relevant energy National Policy Statements).

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3.3.3	In general, there is a lack of information within the Scoping Report regarding details of the proposed scheme, many aspects of which have not been finalised. The red line boundary represents the 'worst-case' scenario, and within it the layouts of proposed new roundabouts and junctions are not specified, nor are the areas that will be utilised for construction compounds, soil and material storage, or for extraction pits. No design details are included of new bridges, abutments, gantries, lighting and other infrastructure, or mitigation measures; and there are no visual representations of the completed scheme.	The scheme description in the Environmental Scoping Report was based on an early design. The scheme description provided in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] provides a detailed description of the permanent and temporary (construction) elements of the proposed scheme. The proposed scheme design, including mitigation, is shown visually on the Environmental Masterplan, which is Figure 2.1 of the Environmental Statement [TR010060/APP/6.2]. Temporary elements of the proposed scheme, including construction compounds, haul roads, soil and material areas and borrow pits are shown on Figure 2.3 of the Environmental Statement [TR010060/APP/6.2].
3.3.4	Some text in the Scoping Report, mostly on the figures in Appendix A, is small scale and difficult to read both on the paper and electronic copies. The Applicant is reminded that the Environmental Statement should be clear and accessible to readers.	Text size has been reviewed and amended where required. It should be noted that figures are produced at A3 or A1 scale, and if viewed digitally, may need to be zoomed in.
3.3.5	The Environmental Statement 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.	Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] provides a description of the baseline scenario, both existing and future (i.e. with consideration of future planned development). Each aspect chapter of the Environmental Statement (Chapters 6 to 15 - [TR010060/APP/6.1]) also describes the existing and future baseline conditions relevant to the aspect. Chapter 16: Cumulative effects assessment [TR010060/APP/6.1] considers future planned development that could give rise to cumulative effects in combination with the proposed scheme.
3.3.6	Although the Applicant notes developments that will be assumed to be under construction or operational as part of the future baseline, it does not mention the proposed Longfield Solar Energy Farm that is proposed to be adjacent to the north of the A12 where the construction phase and possible glint or glare during operation might result in impacts to road users. The planned Beaulieu Park train station already has planning permission and needs to be considered.	These are both included in the short list of projects for the cumulative effects assessment in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].
3.3.7	The Environmental Statement should contain the timescales upon which the surveys which underpin the technical assessments have been based. For clarity, this information should be provided either in the introductory chapters of the Environmental Statement (with confirmation that these timescales apply to all chapters), or in each aspect chapter.	An overview of surveys, including when the surveys were undertaken, is provided in Chapter 5: Environmental assessment methodology, of the Environmental Statement [TR010060/APP/6.1]. Further information on surveys is provided in the relevant aspect chapters of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]).
3.3.8	The Inspectorate expects the Environmental Statement to include a chapter setting out the overarching methodology for the assessment, which clearly distinguishes effects that are 'significant' from 'non-significant' effects. Any departure from that methodology should be described in individual aspect assessment chapters.	Chapter 5: Environmental assessment methodology, of the Environmental Statement [TR010060/APP/6.1] provides the overarching assessment methodology. Each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) also has an assessment methodology section which sets out aspect specific methodology, including how significance of effects is derived.
3.3.9	The Environmental Statement should include details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.	Chapter 5: Environmental assessment methodology, of the Environmental Statement [TR010060/APP/6.1] provides the overarching assumptions and limitations. Each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) also has an assumptions and limitations section which sets out aspect specific assumptions and limitations.
3.3.10	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.	Information on the type and quantity of residues and emissions is included in the relevant aspect chapters of the Environmental Statement [Chapters 6 to 15 [TR010060/APP/6.1]), where that residue or emission is of relevance to an aspect chapter's assessment. Chapter 5: Environmental assessment methodology [TR010060/APP/6.1] signposts to the relevant aspect chapters.
3.3.11	The Scoping Report makes no reference to the total area of agricultural land that may be lost as a result of the proposed scheme. The Environmental Statement provide this information.	This has been included in Chapter 10: Geology and soils, of the Environmental Statement [TR010060/APP/6.1].

Scoping Opinion ID	Scoping Opinion comment	National Highways response
3.3.12	Any mitigation relied upon for the purposes of the assessment should be explained in detail within the Environmental Statement. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. The Environmental Statement should also address how any mitigation proposed is secured, with reference to specific draft DCO requirements or other legally binding agreements.	Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1] assess the likely significance of effects. This assessment considers the proposed embedded and essential mitigation and concludes with the significant residual effects to demonstrate the effectiveness of the mitigation. Mitigation is also detailed within the chapters and secured through the Register of Environmental Actions and Commitments, which is part of the first iteration of the Environmental Management Plan [TR010060/APP/6.5] and the DCO.
3.3.13	The Environmental Statement should identify and describe any proposed monitoring of significant adverse effects and how the results of such monitoring would be utilised to inform any necessary remedial actions.	Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1] include information on any monitoring that would be required for significant adverse residual effects. Monitoring is also included within the Register of Environmental Actions and Commitments, which is part of the first iteration of the Environmental Management Plan [TR010060/APP/6.5].
3.3.14	The Environmental Statement should include a description and assessment (where relevant) of the likely significant effects resulting from accidents and disasters applicable to the proposed scheme. The Applicant should make use of appropriate guidance (e.g. that referenced in the Health and Safety Executives Annex to Advice Note 11) to better understand the likelihood of an occurrence and the proposed scheme's susceptibility to potential major accidents and hazards. The description and assessment should consider the vulnerability of the proposed scheme to a potential accident or disaster and also the proposed scheme's potential to cause an accident or disaster. The assessment should specifically assess significant effects resulting from the risks to human health, cultural heritage, or the environment. Any measures that will be employed to prevent and control significant effects should be presented in the Environmental Statement.	A risk assessment for major accidents and disasters is included in Appendix 5.3: Major accidents and disasters screening [TR010060/APP/6.3]. The risk assessment concluded that there is one residual risk that would need to be addressed through the EIA process, relating to inland flooding. Inland floods are mainly covered under Chapter 14: Road drainage and the water environment [TR010060/APP/6.3], in terms of reducing future flood risk.
3.3.15	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.	Appendix 5.3 of the Environmental Statement [TR010060/APP/6.3] considers existing legislation, policy, and procedures when considering the risk of major accidents and disasters.
3.3.16	The Environmental Statement should include a description and assessment (where relevant) of the likely significant effects the proposed scheme has on climate (for example having regard to the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change. Where relevant, the Environmental Statement should describe and assess the adaptive capacity that has been incorporated into the design of the proposed scheme. This may include, for example, alternative measures such as changes in the use of materials or construction and design techniques that will be more resilient to risks from climate change.	Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1] provides an assessment of the potential effects of the proposed scheme on climate (i.e. greenhouse gas emissions) and the potential vulnerability of the proposed scheme to climate change (having accounted for measures embedded within the design of the proposed scheme to improve its resilience to climate related impacts).
3.3.17	Schedule 4 Part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an Environmental Statement. Appendix E of the Scoping Report examines potential transboundary effects. The Scoping Report concludes that the proposed scheme is not likely to have significant effects on another European Economic Area (EEA) State and proposes that transboundary effects do not need to be considered within the Environmental Statement.	Noted and agreed.
3.3.18	Having considered the nature and location of the proposed scheme, the Inspectorate is not aware that there are potential pathways of effect to other EEA states but recommends that, for the avoidance of doubt, the Environmental Statement details any such consideration and assessment.	The transboundary effects matrix submitted with the Environmental Scoping Report has been reviewed and updated where required and included within Appendix 5.4: Transboundary effects [TR010060/APP/6.3]. This has concluded that there would be no significant effects on any other EEA state.
3.3.19	A reference list detailing the sources used for the descriptions and assessments must be included in the Environmental Statement.	Each chapter of the Environmental Statement [TR010060/APP/6.1] includes a reference list at the end of the chapter. References are also included in Environmental Statement appendices [TR010060/APP/6.3] where relevant.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
3.4.3	Applicants should make effort to agree their approach to the collection and presentation of information with relevant consultation bodies. In turn the Inspectorate expects that consultation bodies will work with Applicants to find suitable approaches and points of reference to allow preparation of applications at this time. The Inspectorate is required to take into account the advice it receives from the consultation bodies and will continue to do so in this regard.	<p>Consultation with the planning authorities and statutory environmental bodies was formally undertaken through the scoping and statutory consultation processes. Each aspect chapter of the Environmental Statement (Chapters 6 to 15 [TR010060/APP/6.1]) includes a description of the feedback received from consultees in the Scoping Opinion and from the statutory consultation, as well as how this feedback has been addressed in the Environmental Statement. Full responses to the Scoping Opinion and statutory consultation are provided in this appendix and in Annex N of the Consultation Report [TR010060/APP/5.2], respectively.</p> <p>Technical consultation has also been regularly undertaken with consultees to discuss scope, methodology, impacts and mitigation. Details of this informal consultation is provided in Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1].</p>
3.5.2	Where documents are intended to remain confidential the Applicant should provide these as separate documents with their confidential nature clearly indicated in the title and watermarked as such on each page. The information should not be incorporated within other documents that are intended for publication or which the Inspectorate would be required to disclose under the Environmental Information Regulations 2004.	Confidential documents are limited to Appendix 9.2: Badger survey report [TR010060/APP/6.3]. This has been marked as confidential. There is no sensitive information, such as sett locations, in any other documents or included on figures.
<b>Air quality</b>		
4.1.2	Within the Environmental Statement, the construction air quality study area should include the potential 11 borrow pit sites that may be used to make up the cut and fill deficit.	Since the Environmental Scoping Report was published, the number of proposed borrow pits has reduced from 11 down to four. The four proposed borrow pits are within the Order Limits and included in the construction dust study area. The construction dust assessment has been undertaken in accordance with Design Manual for Roads and Bridges (DMRB) LA 105 guidance. The general approach to the dust assessment, the potential impacts and likely significant effects are described in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1].
4.1.3	Scoping Report paragraph 6.3.4 states ' <i>There is no clear trend in the monitoring results between 2014 and 2018 at these sites, suggesting exceedances of the AQO [Air Quality Objectives] may persist at these locations for some years to come.</i> ' However, paragraph 6.3.5 states ' <i>Application of the Roadside NO<sub>2</sub> Projection Tool would suggest compliance with the AQOs is likely at these locations in 2027.</i> ' From these sentences, it is unclear whether the NO <sub>2</sub> Projection Tool is applicable to all monitoring sites. To avoid confusion, the Environmental Statement should state where the Projection Tool has been used, and whether the assumptions within the tool corroborate with the data collected.	The air quality assessment in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1] does not rely on any conclusions drawn from the application of the Department for Environment, Food and Rural Affairs (Defra's) monitoring year projection tool. This is because future NO <sub>2</sub> concentrations were modelled at receptors as part of the assessment.
4.1.4	Limited information is provided to explain how the data presented in Table 6.3 of the Scoping Report was collected, processed and annualised. To ensure the data collected accurately represents the baseline NO <sub>2</sub> concentrations, the Applicant should state in the Environmental Statement the entire data set collected, the timeframes for when the data was collected, and the method or model used to annualise the data. Any assumptions or limitations in collecting and/or modelling the data should also be stated in the Environmental Statement.	Details of the collection, processing and annualisation of air quality monitoring data are provided in Appendix 6.1: Air quality monitoring results, of the Environmental Statement [TR010060/APP/6.3]. This also includes assumptions and limitations associated with data collection.
4.1.5	The Highways England monitoring stations, as presented in Table 6.3 and Figure 6.2 of the Scoping Report are not always located close to the Project Control Framework 2 (PCF2) Affected Road Network (ARN). For instance, stations 11, 12 and 13, as shown on Figure 6.2 Sheet 1 of 7, are away from the proposed scheme and the ARN, and Figure 6.2, Sheet 3 of 7 shows no air quality monitoring by Highways England or the local authorities, within Witham. The Environmental Statement should explain the methodology used to determine the locations of the air quality monitoring stations and provide evidence that the locations chosen accurately represent the full extent of the air quality study area.	<p>The study-based air quality monitoring locations were selected to complement existing local authority monitoring and to better facilitate the setting up of the air quality model (e.g. for the purposes of model verification). A representative number of locations were selected near the current and proposed alignment of the A12 to indicate local baseline conditions. Additional monitoring commenced in January 2020 to enhance the existing National Highways sites ahead of the Environmental Statement, but this was discontinued owing to COVID-19.</p> <p>Where data from these sites were not subsequently used for the purposes of model verification, justification for their exclusion is provided in Appendix 6.4: Verification of dispersion model results [TR010060/APP/6.3].</p>

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.1.6	Paragraph 6.3.14 of the Scoping Report states the background concentrations for NO <sub>2</sub> , NO <sub>x</sub> and PM <sub>10</sub> within the proposed scheme provisional Order Limits and the Traffic Reliability Area (TRA) are below the AQOs for NO <sub>2</sub> , NO <sub>x</sub> and PM <sub>10</sub> . However, Table 6.5 shows that NO <sub>x</sub> concentrations within the proposed scheme provisional Order Limits and the TRA could be as great as 32.9 and 36.0 µg/m <sup>3</sup> respectively. These concentrations exceed the 30 µg/m <sup>3</sup> AQO objective for NO <sub>x</sub> . The information within Table 6.5 appears to contradict with paragraph 6.3.14. The Applicant should ensure the information contained within the Environmental Statement is coherent, accurate, and this matter should be clarified within the Environmental Statement. Additionally, it is noted that the Defra background pollutant concentrations for NO <sub>2</sub> , as provided in Table 6.5, are below all the monitoring NO <sub>2</sub> data and Pollution Climate Mapping (PCM) modelled data provided in paragraphs 6.3.15 to 6.3.17. The Environmental Statement should use the models/data that best represents the study area. Justification should also be provided explaining why a particular model/data was used instead of others.	Appropriate background, local, and National Highways specific air quality monitoring has been applied for the assessment reported in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. According to the latest Defra background maps, all concentrations are below AQOs in the base traffic model year 2019, peak construction year 2025 and operational year 2027. Further details are provided in Chapter 6. In addition, details of the survey and air quality monitoring results are presented in Appendix 6.1: Air quality monitoring results [TR010060/APP/6.3]. More detail concerning management of background concentrations and air pollution modelling in general are discussed in Appendix 6.3: Dispersion modelling process [TR010060/APP/6.3].
4.1.7	Table 6.5 of the Scoping Report includes the locations of 'provisional Order Limits' and the 'TRA'. These locations cover a large distance which include different levels of development and infrastructure. The Environmental Statement should split these locations into smaller areas and provide a breakdown of the Defra data used in order to show which areas of the provisional Order Limits and TRA are worst impacted by pollutants.	A total of 267 human health receptor locations have been modelled in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. These have been selected as those most likely to experience the highest pollutant concentrations or largest changes in air pollutant concentrations as a result of the proposed scheme. 159 of these receptors were assessed owing to their proximity to the construction traffic ARN, whilst 260 were assessed owing to their proximity to the operational traffic ARN. Note, the construction ARN extended beyond the operational ARN and so seven receptors were affected by construction only.
4.1.8	Paragraphs 6.3.15 to 6.3.17 of the Scoping Report discuss the application of Defra's PCM, but omit details such as the timeframe of the model, any assumptions included within the model, and the locations of the model's census IDs. This information should be included within the Environmental Statement.	Details of Defra's PCM model, including the timeframe and assumptions, have been provided in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. Figure 6.2 [TR010060/APP/6.2] shows the location of the model census IDs.
4.1.9	Considering the number of human receptors within 200m of the ARN, the Applicant may wish to provide a breakdown of the type of affected receptors within the Environmental Statement, for example, the number of homes, schools or places of worship.	See response to Scoping Opinion ID 4.1.7. All results have been presented in Appendix 6.5: Air quality results [TR010060/APP/6.3]. Property use is provided for human health receptors.
4.1.10	The Environmental Statement should include justification for assigning a 'medium' sensitivity to the receptors listed within paragraph 6.3.25 of the Scoping Report, especially for receptors where the AQO have been exceeded or are close to the AQO threshold of exceedance. It is noted that bullet points 2 and 3 of paragraph 6.3.25 have been based of the DRMB LA 105 Table 2.11b Receiving environment sensitivity. However, bullet points 2 and 3 do not accurately represent what is contained within Table 2.11b of the DMRB LA 105. Within the Environmental Statement, the sensitivity criteria used should accurately follow the stated guidance. Additionally, the Applicant may find it prudent to determine sensitivity of ecological sites on a variety of factors and not rely solely on distance from the designated site to the ARN. The Environmental Statement should provide clear and justifiable explanations for how the sensitivity of receptors is determined.	A full description of the receiving environment used in the assessment is provided in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. Justification for the selection of receptors has been provided in Section 6.8 of Chapter 6. Worst-case receptors (e.g. those expected to experience the highest pollutant concentrations and / or greatest changes in pollutant concentrations) have been selected within the study area.
4.1.11	The impacts associated with any demolition works should be assessed and included within the Environmental Statement.	The approach for assessment of dust emissions, potential impacts and likely significant effects e.g. demolition works, is described in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1].

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.1.12	The Environmental Statement should include an appropriate level of detail when describing the mitigation measures in order for the reader to ascertain the locations, dimensions and efficacy of the mitigation measures. The Construction Environmental Management Plan (CEMP) and Project Air Quality Action Plan (PAQAP) (if required) should be secured through the DCO or other legal mechanism.	Appendix 6.6: Project air quality action plan [TR010060/APP/6.3] confirms that significant effects are likely for ecological receptors located at Perry's Wood. The PAQAP describes the considered mitigation measures to reduce the significant impact from nitrogen deposition. It also includes a separate Annex A detailing a sensitivity analysis of traffic parameters on the adjacent Inworth Road. After due consideration of potential measures and results from the sensitivity testing, the PAQAP supports offsetting the impact of nitrogen deposition at Perry's Wood via additional tree planting. Details of the offsetting are described further in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].
4.1.13	Scoping Report paragraph 6.7.4, bullet point one states, ' <i>A representative number of sensitive human health receptors will be selected, which will include all receptors with a likelihood of exceeding the air quality threshold</i> '. The Environmental Statement should provide a justification for how these locations were determined and the Applicant should attempt to agree the locations of these receptors with the relevant statutory consultee(s).	A description of human health receptors has been provided in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. Stakeholder engagement has been undertaken with the four local authorities through whose authority areas the proposed scheme passes. These local authorities are Colchester Borough Council, Chelmsford City Council, Maldon District Council and Braintree District Council. This engagement was undertaken in August 2020 and focused on describing and then agreeing the scope of the air quality assessment methodology to support the Environmental Statement. In addition, following discussions with members of the public at the Marks Tey community event, some slight spatial enhancements were made to the assessment methodology in terms of the study area extent and the receiving environment (e.g. the study area was extended to Great Tey Road from junction 25 (Marks Tey interchange) and additional modelling receptors were included along Inworth Road) to alleviate general concerns regarding changes in air quality in specific locations.
4.1.14	The Environmental Statement should state all assumptions and limitations that have been used or encountered during the assessment.	Limitations and assumptions are described in Section 6.6 of Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1].
<b>Cultural heritage</b>		
4.2.1	Taking into consideration the nature of the proposed scheme is to replace the existing A12, it is unlikely that the proposed scheme would result in significant operational effects to the historic landscape. Therefore the Inspectorate agrees that this matter can be scoped out of the Environmental Statement.	The precautionary approach has been taken by scoping operational phase impacts on the historic landscape into the assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. This aligns with comments raised by Historic England in the Scoping Opinion.
4.2.2	The Inspectorate considers that the extent of the study area should be informed by the nature of the heritage assets in addition to the type and extent of likely impacts on them, rather than an arbitrary pre-determined distance. The assertion that there will be no significant effects on heritage assets beyond 1km is premature as the provisional Zone of Theoretical Visibility (ZTV) depicted in Figure 8.3 of the Scoping Report suggests the proposed scheme has potential to impact on designated heritage assets across a wide area. The assessment should define a study area according to the sensitivity of the receiving environment and the potential impacts of the project (DMRB LA 106 Cultural heritage assessment, 3.5). The Applicant should make effort to agree the study area and ZTV with appropriate statutory heritage consultation bodies. The Environmental Statement should also consider effects to non-designated heritage assets including locally-listed buildings. The Applicant should make effort to agree the ZTV with the relevant statutory bodies.	A study area extending 1km from the Order Limits has been used to identify designated cultural heritage assets where impacts from the proposed scheme could occur to their setting. As suggested, a flexible approach has been adopted when identifying high value assets on which there may be impacts on their setting beyond 1km. This has been guided by professional judgement and the extent of the proposed scheme's ZTV prepared as part of the Landscape and Visual Impact Assessment in Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1]. The assessment also considers any physical and historical connectivity and relationships with other monuments (including locally-listed buildings) and the wider landscape. Viewpoints assessed within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] have been consulted on, within the context of the ZTV and agreed with local planning authorities and Historic England in February and September 2021.

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4.2.3	The Environmental Statement should provide a detailed archaeological baseline including summaries of the results of archaeological investigations undertaken, and these investigations should be appended to the Environmental Statement to support the conclusions of the Environmental Statement. Furthermore, where additional data is available, such as within the Colchester Historic Environment Record, the desk based assessment should be updated with this information. See Colchester Borough Council's response in Appendix 2 of the Scoping Opinion for further information. The Applicant should consider utilising lidar and historical aerial photomontages to inform their assessment of cultural heritage impacts.	<p>Baseline data from Colchester Historic Environment Record, the results of the archaeological investigations and Aerial Investigation and Mapping report have been taken into account in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p> <p>The archaeological evaluation and Aerial Investigation and Mapping reports are included as appendices to the Environmental Statement [TR010060/APP/6.3]:</p> <ul style="list-style-type: none"> <li>• Appendix 7.3 Palaeolithic Desk-Based Assessment</li> <li>• Appendix 7.4 Aerial Investigation and Mapping Report</li> <li>• Appendix 7.5 Geophysical Survey Phase 1 Report</li> <li>• Appendix 7.6 Geophysical Survey Phase 2 Report</li> <li>• Appendix 7.7 Archaeological Trial Trenching Final Report</li> <li>• Appendix 7.8 Palaeolithic and Palaeoenvironmental Review</li> </ul>
4.2.4	The Inspectorate welcomes recognition of the high potential for encountering Palaeolithic remains during construction of the proposed scheme. The nature and scope of specialist palaeolithic survey and assessment ahead of the preparation of the Environmental Statement should be devised in consultation with relevant statutory heritage consultees. An initial deposit model for the proposed scheme should be prepared that could be enhanced following later specialist geoarchaeological sampling. Geophysical and geoarchaeological techniques that can investigate deeper deposits of archaeological interest should be considered.	<p>A programme of archaeological evaluation including an evaluation of Palaeolithic archaeological potential and creation of a deposit model (Appendices 7.4 to 7.8 of the Environmental Statement [TR010060/APP/6.3]), has been conducted in line with an archaeological Written Scheme of Investigation prepared in consultation with stakeholders. The results of the archaeological evaluation have informed the assessments in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p> <p>The Palaeolithic assessment is included as Appendix 7.8: Palaeolithic and Palaeoenvironmental Review, of the Environmental Statement [TR010060/APP/6.3].</p>
4.2.5	The two historic greens, Easthorpe Green and Potts Green, which form the landscape settings of Easthorpe Green Farmhouse Grade II Listed building, and the junction of two Roman roads, the south-west to north-east line of the modern A12 itself and a second broadly east-west route surviving as Easthorpe Road east of the A12 near Marks Tey, should be included within the non-designated archaeological assets assessment.	The contribution that Potts Green and Easthorpe Green make to the setting of heritage assets has been taken into account in Chapter 7: Cultural heritage of the Environmental Statement [TR010060/APP/6.1].
4.2.6	Grade II listed buildings have been omitted from Table 7.1 of the Scoping Report. The Environmental Statement should clearly state the receptor value of Grade II listed buildings.	The value of listed buildings of all grades has been assessed to be high in line with DMRB LA 104. This is clearly stated in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
4.2.7	Table 7.1 of the Scoping Report classes non-designated archaeological remains as field boundaries or undated cropmark features. The Environmental Statement should avoid a generalised approach as no systematic archaeological investigation has been undertaken at this stage and that it is difficult to establish the value of the majority of below-ground archaeological remains along the proposed route.	The results of field-based archaeological evaluation have been used to enhance the understanding of non-designated archaeological remains within the Order Limits. This has been taken into account in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] and full details are presented in Appendix 7.1: Cultural heritage gazetteer [TR010060/APP/6.3].
4.2.8	Scoping Report paragraphs 7.4.2 and 7.4.3 make no reference to the potential impact the location of the proposed junctions, construction compounds, and additional elements of the proposed scheme may have on heritage assets. This impact should be included within the Environmental Statement cultural heritage assessment.	The impact of proposed junctions, construction compounds and additional elements of the proposed scheme on heritage assets has been assessed and the results are presented in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
4.2.9	The Scoping Report notes the potential physical impacts of removal of, or damage to, archaeological remains during maintenance works, and damage through pollutants. The assessment should also consider physical impacts caused by continued compression during operation (especially if any significant archaeological remains are not fully excavated and recorded but preserved in situ), as well as long-term effects caused by drainage, dewatering and desiccation or alterations in soil pH, especially of any waterlogged deposits. The latter could affect deposits outside of the direct footprint of the proposed scheme, and this should also be addressed within the Environmental Statement.	The effects of changes in groundwater regimes, pollution, and compression during construction have been taken into account and are presented in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. For listed buildings where potential significant effects have been identified, a detailed differential settlement risk assessment would be carried out during the detailed design phase (this mitigation is included in the Register of Environmental Actions and Commitments, within the first iteration of the Environmental Management Plan [TR010060/APP/6.5]).

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.2.10	<p>The Scoping Report references alterations to the setting of historic buildings where new infrastructure is present in key views towards, through and across an asset.</p> <p>The Environmental Statement should consider using the terms 'built heritage' or 'built heritage assets' rather than 'historic buildings', as this then includes structures such as pillboxes, bridges, or gateposts and milestones.</p> <p>The Environmental Statement should also assess the effects on key views looking out from assets. Particular consideration should be given to the effect on the setting of the Grade II listed buildings at Easthorpe Green Farm (Easthorpe Green Farmhouse and Flispies) and the Grade II* listed barn and Grade II Marks Tey Hall and their relationship to the wider landscape.</p>	<p>The term 'built heritage' has been used in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1], which also includes an assessment of the impact on the setting of such assets.</p> <p>The assets named have been assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
4.2.11	<p>The Scoping Report states design mitigation would include landscape design to avoid sensitive assets and viewpoints. The Environmental Statement should provide further information on the landscape design, including an assessment of the efficacy of the mitigation measure and a figure(s) depicting the location of the landscape design. Furthermore, where landscape design is an integral part of the mitigation, future baseline photomontages should include the landscape design. The Applicant should make effort to agree any landscape design mitigation with the relevant statutory bodies.</p>	<p>Landscape mitigation is illustrated on Figure 2.1: Environmental Masterplan [TR010060/APP/6.2]. Photomontages presented on Figure 8.5 [TR010060/APP/6.2] incorporate environmental mitigation including planting. Photomontages are based on winter year 1 (to illustrate worst case when mitigation planting is unestablished and when vegetation is not in leaf) and summer year 15 (to illustrate best case when mitigation planting would be established and vegetation would be in leaf). Landscape mitigation has been developed through consultation with relevant statutory bodies and will be agreed with relevant statutory bodies through the development of the Statement of Common Ground.</p>
4.2.12	<p>The Scoping Report outlines listed buildings likely to experience significant effects on settings, and states that the expanded junction 19 (Boreham) would affect the entrance of the Grade II registered park and garden and listed building at Boreham Hall. The Environmental Statement should take into account that Boreham Hall is a Grade I listed structure and therefore the setting of Boreham House includes the Grade II listed registered park and garden. The assessment within the Environmental Statement should ensure that setting of the heritage asset as a whole is taken into account when determining significance of effect.</p>	<p>Impacts on the setting of Grade I listed Boreham House, including the Grade II registered park and garden, have been taken into account and are presented in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
4.2.13	<p>The Scoping Report states that all further assessment will be undertaken in accordance with the relevant sections of DMRB LA 106 and guidance such as the National Planning Policy Framework (NPPF) and The Setting of Heritage Assets: Good Practice Advice in Planning Note 3 (Historic England 2017).</p> <p>The Inspectorates suggests that the Environmental Statement should also follow and reference these key national professional standards and guidelines, where relevant:</p> <ul style="list-style-type: none"> <li>• Chartered Institute for Archaeologists (CIfA) 2014 – Standard and Guidance for Commissioning Work or Providing Consultancy Advice on Archaeology and the Historic Environment</li> <li>• Chartered Institute for Archaeologists (CIfA) 2014 – Standard and Guidance for Archaeological Field Evaluation</li> <li>• Chartered Institute for Archaeologists (CIfA) 2014 – Standard and Guidance for Archaeological Geophysical Survey</li> <li>• Chartered Institute for Archaeologists (CIfA) 2017 – Standard and Guidance for Archaeological Desk based Assessment</li> <li>• EAC 2016 – EAC Guidelines for the Use of Geophysics in Archaeology</li> <li>• Historic England 2015 – Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment</li> <li>• Historic England 2015 – Managing Significance in Decision taking in the Historic Environment: Good Practice Advice in Planning Note 2</li> </ul>	<p>The assessment has been undertaken in accordance with DMRB LA 106 and LA 104, and relevant policies in the National Policy Statement for National Networks (2014), National Policy Statement for Energy (EN-1), and National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). It has also been carried out with reference to appropriate professional guidance published by Historic England and the Chartered Institute for Archaeologists. Section 7.5 of Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1], sets out the guidance documents used.</p>

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	<ul style="list-style-type: none"> <li>Historic England 2019 – Statements of Heritage Significance: Analysing Significance in Heritage Assets</li> </ul> <p>Additional national and regional research agendas and guidance documents should also be referred to and referenced.</p>	
4.2.14	The Environmental Statement should provide more details concerning methodologies and techniques utilised for the archaeological geophysical survey and geoarchaeological investigation.	<p>Details of the techniques and methodologies used in the various archaeological investigations is presented in the appropriate cultural heritage appendices to the Environmental Statement [TR010060/APP/6.3]:</p> <ul style="list-style-type: none"> <li>Appendix 7.5: Geophysical Survey Phase 1 Report</li> <li>Appendix 7.6: Geophysical Survey Phase 2 Report</li> <li>Appendix 7.7: Archaeological Trial Trenching Final Report</li> <li>Appendix 7.8: Palaeolithic and Palaeoenvironmental Review</li> </ul>
4.2.15	Consideration of potential impacts that changes to the water table during construction or operation may have on archaeological assets should be included within the Environmental Statement.	The effects of changes in groundwater regimens during construction and operation have been taken into account and is presented in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
<b>Landscape</b>		
4.3.4	The study area for the landscape assessment is described as having a buffer of approximately 2km from the proposed scheme, and a minimum of 1km from the draft Order Limits. The Inspectorate considers that the study area should be informed by the type of visual receptors and the nature, extent and severity of likely impacts on them, rather than an arbitrary pre-determined distances. Furthermore, the Scoping Report lacks evidence to support the assumption that visual effects beyond 1km are unlikely to be significant. The Environmental Statement should provide further evidence to support this assumption and also take into account viewpoints from further afield that look onto the location of the proposed scheme. Additionally, the Applicant should make effort to agree the landscape assessment study and viewpoints with the relevant statutory bodies. The Applicant should make effort to agree the study area with the relevant statutory consultation bodies.	The study area applied to Chapter 8: Landscape and visual [TR010060/APP/6.1] is considered an appropriate and proportionate extent to ascertain the wider landscape context surrounding the proposed scheme and to focus on the likely significant landscape and visual effects. Five additional longer distance illustrative viewpoints in excess of 1km from the Order Limits were identified to demonstrate within Chapter 8 that visual effects beyond 1km are unlikely to be significant due to distance and intervening blocking features. The location of these viewpoints was included within the landscape consultation with local planning authorities and Historic England in February and September 2021. The landscape consultation in February 2021 also included reference to the proposed study area for the landscape and visual impact assessment for agreement.

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4.3.5	The Inspectorate welcomes mention of the Guidelines for Landscape and Visual Impact Assessment (3rd edition) (Landscape Institute, 2019) but the Environmental Statement should also reference other professional guidelines produced by the Landscape Institute – Visual Representation of Development Proposals (2019), Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs) (2010), and Infrastructure (2020); in addition to National Infrastructure Design Principles: Primary Research (Frame Projects 2020).	Photography and photomontages presented on Figures 8.4 and 8.5 [TR010060/APP/6.2] of Chapter 8: Landscape and visual [TR010060/APP/6.1] have been taken and produced in accordance with the Visual Representation of Development Proposals Technical Guidance Note 06/19 (Landscape Institute, 2019). Reviewing Landscape and Visual Impact Assessments (LVIAs) and Landscape and Visual Appraisals (LVAs) Technical Guidance Note 1/20 (Landscape Institute, 2020) provides guidance on how to review LVIAs or LVAs prepared by others and it has not therefore been considered relevant to reference this guidance within the Environmental Statement. All relevant guidance applied is referenced within Chapter 8.
4.3.6	The Environmental Statement should consider veteran, ancient, and notable trees as distinct LVIA receptors and assess potential impacts on their settings. Every effort should be made to retain any Category A and B trees which are highlighted within the survey, along with any high value veteran and ancient trees/woodlands. Once designs of the proposed scheme and construction methodologies have been finalised, an arboricultural method statement and a tree protection plan should be included within, or appended to, the Environmental Statement. If the removal of trees from the Order Limits is required, a tree removal plan should be provided.	Where practicable, the design minimises the loss of vegetation, including trees. The assessment of impacts on landscape components, such as trees and woodland, and perceptual and aesthetic aspects has been considered within the assessment of impacts on landscape character. A concise section has been included within Chapter 8: Landscape and visual [TR010060/APP/6.1] to consider the loss of trees with Tree Preservation Orders (TPOs), veteran, ancient and notable trees as defined by the Woodland Trust, and further potential veteran and ancient trees identified from a scheme-specific arboricultural survey. Tree loss is illustrated on the Retained and Removed Vegetation Plans [TR010060/APP/2.14]. An Arboricultural Method Statement and Tree Protection Plan would be prepared by the Principal Contractor prior to construction.
4.3.7	Figure 13.1 depicts national and regional cycle routes, but not public footpaths or bridleways. Within the Environmental Statement, a figure(s) should be presented that clearly depicts the locations of the PRowS and bridleways, and any temporary or permanent diversions to the routes. Where severance to PRowS or bridleways are to occur, this should also be depicted on the figure(s).	Figure 13.3 [TR010060/APP/6.2] within Chapter 13: Population and human health [TR010060/APP/6.1] presents the impacts on land use and accessibility. This figure includes all public rights of way, and where permanent diversions and permanent closure of sections of public rights of way are required and also indicates location where temporary severance is likely to occur and those locations where historic severance would be reduced. Reference should be made to the Construction Phase Plans, which are available in Volume 2 of the DCO application [TR010060/APP/2.15], as these show the proposed temporary diversions to public rights of way.
4.3.8	The Inspectorate notes that the Grade II listed registered park and garden at Hatfield Priory is in fact 600m south-east of the red line boundary of the proposed scheme and not 700m, the Grade II* Braxted Park is 720m to the south-east and not 800m, and the Grade II Terling Place is 910m to the north-west, not 1.8km. The Environmental Statement should include accurate distances from the registered parks and gardens to the proposed scheme.	Distances specified within the Environmental Statement [TR010060/APP/6.1] have been checked for accuracy.
4.3.9	The Inspectorate notes that there is a round barrow adjacent to the long mortuary enclosure which forms part of the Scheduled area. This feature should be considered within the landscape assessment within the Environmental Statement.	Although heritage features help inform the sensitivity of the landscape and are relevant to the assessment of landscape and visual effects, this feature is no longer visible as an earthwork at ground level. Heritage assets have been considered within Chapter 7: Cultural heritage [TR010060/APP/6.1].
4.3.10	The Inspectorate welcomes descriptions of available views within the area but would like to see these supported and illustrated in the Environmental Statement with GIS-based viewshed analyses. Photomontages which may include GIS based viewshed analysis should be provided of the potential visual receptor to allow the reader to understand the proposed scheme's visibility. These photomontages should include both summer and winter views.	Photomontages presented on Figure 8.5 [TR010060/APP/6.2] within Chapter 8: Landscape and visual [TR010060/APP/6.1] illustrate the view at winter year 1 (to illustrate worst case when mitigation planting is unestablished and when vegetation is not in leaf) and summer year 15 (to illustrate best case when mitigation planting would be established and vegetation would be in leaf). Viewpoints for, and the methodology for the production of, photomontages were agreed through consultation with local planning authorities and Historic England.
4.3.11	The Environmental Statement should include details of the assessment of impacts on visual receptors of aspects such as construction compounds and stockpiled materials, supported by plans of the proposed scheme of works.	Chapter 8: Landscape and visual [TR010060/APP/6.1], which includes visual impact assessment from representative viewpoints, considers the presence of temporary construction features including compounds and stockpiled materials.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.3.12	The Environmental Statement should include visualisations showing 'before' and 'after' the implementation of mitigation measures at relevant viewpoints.	Photomontages presented on Figure 8.5 [TR010060/APP/6.2] within Chapter 8: Landscape and visual [TR010060/APP/6.1] illustrate the view at winter year 1 (to illustrate worst case when mitigation planting is unestablished and when vegetation is not in leaf) and summer year 15 (to illustrate best case when mitigation planting would be established and vegetation would be in leaf). Viewpoints for, and the methodology for the production of, photomontages were agreed through consultation with local planning authorities and Historic England.
4.3.13	<p>The Hedgerows Regulations 1997 are also relevant here. Hedges classed as 'Important' under the Regulations would normally be retained fully intact and existing gaps utilised within these hedgerows for any proposed breach points. If not classified as 'Important', then sections of hedgerow could be removed to facilitate development. Hedgerow surveys are undertaken by local planning authorities.</p> <p>The Environmental Statement should assess possible impacts upon hedgerows in consultation with the relevant local authorities, and produce detailed mitigation proposals if significant effects are identified. A hedgerow survey should also be undertaken and where hedgerows are judged to be 'Important' under the Hedgerows Regulation 1997 are identified, effort should be made to ensure these hedgerows are not damaged or removed by the proposed scheme.</p> <p>Furthermore, the landscape assessment should take into account potential impacts on hedgerows and how these impacts could affect the landscape character of the receiving environment. Where hedgerows are to be impacted, the Environmental Statement should state any mitigation measures to be implemented and how the measures will be secured through the DCO or other legal mechanism.</p>	<p>In line with DMRB LA 107 Landscape and Visual Effects, Chapter 8: Landscape and visual [TR010060/APP/6.1] considers the effect on the constituent landscape features and elements/components of the landscape character areas in combination as part of the effects on landscape character and not as individual receptors. Important hedgerows have been surveyed and an assessment of hedgerows against the biodiversity criteria within the Hedgerow Regulations (1997) has been undertaken as part of Chapter 9: Biodiversity [TR010060/APP/6.1] and is reported in Appendix 9.7 Hedgerow survey report [TR010060/APP/6.3].</p> <p>An assessment of hedgerows has also been undertaken as part of Chapter 7: Cultural heritage [TR010060/APP/6.1], which concludes that no hedgerows relevant to the proposed scheme meet the archaeology and history criteria for Important Hedgerows.</p> <p>Where any hedgerows are impacted, mitigation measures are outlined setting out how these will be secured and included within the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5]. Important Hedgerows affected by the proposed scheme are listed within Schedule 8 of the draft Development Consent Order [TR010060/APP/3.1].</p>
4.3.14	The Environmental Statement should assess the effect of new lighting on sensitive landscape and visual receptors at night-time during construction and operation.	Chapter 8: Landscape and visual [TR010060/APP/6.1] considers the effect of new lighting on sensitive and other landscape and visual receptors during construction and operation.
4.3.15	The Scoping Report states that access to receptors and viewpoints to be assessed will be restricted to publicly-accessible areas. This approach has potential to limit the assessment of potential impacts on receptors such as heritage assets including listed buildings. The Applicant should make effort to undertake photomontages at privately-owned land that might be susceptible to significant effects.	Effects on heritage assets are considered within Chapter 7: Cultural heritage [TR010060/APP/6.1]. A proportionate number of representative viewpoints and photomontage locations, agreed through consultation with local planning authorities and Historic England, have been assessed within Chapter 8: Landscape and visual [TR010060/APP/6.1]. The representative viewpoints focus on likely significant effects and include consideration of views from heritage assets, both public and privately owned. For example, representative viewpoint 1 is from New Hall registered park and garden taken from Centenary Circle long distance path towards junction 19. Representative viewpoint 3 is from the Chelmer and Blackwater Navigation Conservation Area where the Centenary Circle long distance path meets the eastbound towpath (PRoW) looking towards junction 19 and Boreham House Registered Park and Garden.
<b>Biodiversity</b>		
4.4.3	The Applicant proposes to scope out the Mark Teys Brickpit Site of Special Scientific Interest (SSSI) from the biodiversity assessment due to Mark Teys Brickpit being designated for geological and not ecological reasons. On this basis the Mark Teys Brickpit SSSI can be scoped out of the Environmental Statement biodiversity assessment.	Noted and agreed.
4.4.4	The Applicant identifies that no ecological designated SSSIs or National Nature Reserves are within the 2km Zone of Influence of the proposed scheme. Consequently, these sites have been scoped out of the Environmental Statement. The Inspectorate agrees that due to the distance between these sites and the proposed scheme, significant effects on these sites are unlikely and these sites can be scoped out of the Environmental Statement.	Since the time of writing the Environmental Scoping Report, Tiptree Heath SSSI and the River Ter SSSI have been scoped in and are included in the assessment in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1]. All National Nature Reserves are still scoped out.

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4.4.5	<p>The Inspectorate does not consider sufficient evidence regarding the level of survey effort to date has been provided within the Scoping Report to conclude that dormice are absent within the study area. Therefore, the Inspectorate does not agree that impacts on dormice can be scoped out of the Environmental Statement.</p> <p>However, if the further ecological surveys yet to be undertaken provide evidence that dormice are not present within the ecological study area, then this evidence should be presented within the Environmental Statement and impacts on dormice could be scoped out.</p>	<p>Appendix 9.6: Dormouse survey report [TR010060/APP/6.3] details sufficient survey effort throughout the survey area to conclude dormice are absent.</p> <p>While dormouse has been scoped out with regard to the main works of the proposed scheme, surveys are ongoing with regard to the gas main diversion and therefore dormouse has been scoped in for the gas main diversion pending the results of field surveys that will be undertaken April to September 2022. The absence of the above data is not considered a significant constraint to the assessment undertaken. If dormouse are identified as present, any potential impacts would be sufficiently mitigated for through standard mitigation techniques as set out in Section 9.10 of Chapter 9: Biodiversity [TR010060/APP/6.1].</p>
4.4.6	<p>The Inspectorate agrees that any impacts to invasive and non-native species (INNS) would not result in significant effects and therefore impacts to INNS can be scoped out of the Environmental Statement.</p>	<p>Noted and agreed. The management of INNS has been detailed in an Invasive Species Management Plan (ISMP), which forms part of the first iteration Environmental Management Plan [TR010060/APP/6.5]. This would be updated by the Principal Contractor prior to construction.</p>
4.4.7	<p>The Applicant should consider whether the baseline data gathered in 2017 would still be representative of the environment at the time of submission of the Environmental Statement. If not, the Environmental Statement should include updated baseline information that accurately represents the biodiversity of the study area at the time of submission of the Environmental Statement. The Applicant should make effort to consult with the relevant statutory consultee(s) on the baseline data used within the biodiversity assessments within the Environmental Statement.</p>	<p>Updated baseline data has been used in most instances, often in conjunction with 2017 data to provide greater depth of detail where it is considered relevant. The age and dates of data used is detailed within Section 9.5 of Chapter 9: Biodiversity [TR010060/APP/6.1] and in the relevant appendices. Feedback on survey methodologies and on the age of baseline data from Natural England is documented within Section 9.3 of Chapter 9. Updated surveys will be undertaken prior to construction to ensure validity of data.</p>
4.4.8	<p>The Environmental Statement should explain the district level licensing (DLL) approach to mitigating potential impacts on GCN taken by the Applicant. The Environmental Statement should also set out how the DLL and mitigation measures for GCN will be secured through the DCO or other legal mechanism. Scoping Report Appendix I states that no further GCN surveys are to be undertaken due to the DLL and ongoing consultation with Natural England. Details of these consultations should be included within the Environmental Statement</p>	<p>Chapter 9: Biodiversity [TR010060/APP/6.1] details how the DLL approach works, how it will be applied to the proposed scheme and the mitigation that it will entail. Consultation with Natural England on the DLL process is also detailed within Chapter 9 and it is confirmed that additional surveys are not required.</p>
4.4.9	<p>Paragraph 9.4.29 states that receptors stated to be scoped into the Environmental Statement may be scoped out on the basis that further surveys and data collection suggest no impact to the receptors may arise. If this approach is followed, the Environmental Statement should include all the relevant data and evidence that resulted in the change in scope of the assessment, and where agreement with statutory bodies on the change of scope has arisen, evidence of these agreements should also be included within the Environmental Statement.</p>	<p>All discussions with consultees and stakeholders are detailed within Section 9.3 of Chapter 9: Biodiversity [TR010060/APP/6.1]. Where receptors have been scoped out evidence for this, including details of survey results, have been explained.</p>
4.4.10	<p>The Scoping Report provides a high level description of potential mitigation measures and does not state the location of the mitigation measures or their effectiveness at mitigating impacts. The Environmental Statement should describe mitigation measures in sufficient detail that the location and effectiveness may be evaluated. To aid the reader's understanding of the mitigation measures, a figure(s) should be included within the Environmental Statement that depicts the locations of the mitigation measures. The Environmental Statement should also state how the mitigation measures will be secured through the DCO or other legal mechanism.</p>	<p>Mitigation measures and any proposed monitoring regimes are described in detail in Section 9.10 of Chapter 9: Biodiversity [TR010060/APP/6.1]. Locations of mitigation are shown on figures where relevant and summarised within Figure 2.1: Environmental Masterplan [TR010060/APP/6.2]. Mitigation measures will be secured through the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5].</p>
4.4.11	<p>Where planting of vegetation is to be undertaken as a mitigation measure, the Applicant should make effort to agree the planting mix with the relevant authority.</p>	<p>Mitigation planting species mixes are included within the Landscape and Ecological Management Plan, which forms part of the first iteration Environmental Management Plan [TR010060/APP/6.5]. Planting mixes will be agreed with the Local Authorities and other key stakeholders during detailed design.</p>

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4.4.12	Paragraph 9.5.1 of the Scoping Report states that embedded mitigation has included avoiding important ecological receptors, however the proposed scheme's Order Limits, according to Figure 9.1, overlap with Whetmead Local Nature Reserve(LNR)/Local Wildlife Site (LWS) and border Brockwell Meadows LNR/LWS. The Environmental Statement should include an explanation as to why it is necessary for the Order Limits to encroach on the Whetmead LNR/LWS and border the Brockwell Meadows LNR/ LWS. The Applicant should make effort to agree any site specific mitigation measures required to reduce impacts to these two sites with the relevant local authority. Any site specific mitigation measures required should be described in detail within the Environmental Statement and secured through the DCO or other legal mechanism.	Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] explains why the Order Limits encroach on Whetmead LNR/LWS and why they border (but do not encroach on) Brockwell Meadows LNR/LWS. Due to the narrow corridor along which the A12 is located close to Whetmead LNR/LWS, there is no alternative but to encroach on the LNR/LWS site boundary. Section 9.10 of Chapter 9 describes detailed mitigation proposals for Whetmead LNR/LWS and how they will be secured. A meeting was held with Witham Town Council on 9 March 2022 to agree the proposed ecology mitigation for Whetmead LNR/LWS. These measures are included in the Register of Environmental Actions and Commitments, which forms part of the first iteration Environmental Management Plan [TR010060/APP/6.5].
4.4.13	The Environmental Statement should include comprehensive assessments to determine any ecological impact that would arise from the construction and completion of any river realignments. The Applicant should make effort to agree appropriate designs to river realignments with the relevant consultation bodies.	All discussions with consultees and stakeholders are detailed in Section 9.3 of Chapter 9: Biodiversity [TR010060/APP/6.1]. River realignments have been discussed with the Environment Agency and the design team have agreed to carry out two-stage realignments with gravel beds comprising of pool-riffle sequences. These would also have gently sinuous planforms. This is with the exception of Roman River, which cannot comprise of a two-stage channel due to the surrounding priority habitat, instead the channel base would comprise of varied widths to encourage habitat creation. Ordinary watercourse realignments and excavations would also be one-stage and exhibit gently sinuous planforms with bank tops pushed back. Impacts, as well as mitigations, relating to river realignments are also assessed in Sections 9.9 and 9.11 of Chapter 9.
4.4.14	If the translocation of species is required, the Environmental Statement should state where the species would be translocated to, and the activities required for the translocation.	Species that may require translocation and the receptor sites to which they would be moved are detailed in Section 9.10 of Chapter 9: Biodiversity [TR010060/APP/6.1], including how the receptor sites would be created or improved to increase their suitability to relevant species. Receptor sites are shown on Figure 2.1: Environmental Masterplan [TR010060/APP/6.2] as ecological mitigation areas.
4.4.15	The ISMP should follow appropriate guidance outline by Defra and state any potential risks that would be associated with the removal or destruction of INNS during the construction of the proposed scheme. Consultation with statutory consultees over the content of the ISMP should be sought, and the Environmental Statement should state how the ISMP would be secured through the DCO or other legal mechanism.	An ISMP would be produced by the Principal Contractor and would be implemented to control and prevent the spread of INNS. It would describe how non-native plant and animal species would be managed or removed in order to prevent their spread in the terrestrial and aquatic environment during construction of the proposed scheme. The ISMP will be secured through the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan (EMP) [TR010060/APP/6.5]. A first iteration of the ISMP is also included in the first iteration EMP [TR010060/APP/6.5] and would be updated by the Principal Contractor into the second iteration EMP, as appropriate and necessary, prior to commencement of construction works. The ISMP will follow Defra guidance (How to stop invasive non-native plants from spreading, Defra 2022), stating any risks associated with removal of INNS.
<b>Geology and soils</b>		
4.5.3	The Scoping Report paragraph 10.4.1 states that the Marks Tey Brickpit SSSI could be impacted by dust or leachate. It goes on to state that best practice methods relied upon will ensure no significant effects to Marks Tey Brickpit SSSI will occur during construction. On the basis that the site is outside the footprint of the development and that effects due to dust or leachate are capable of mitigation through standard construction measures effects on the SSSI may be scoped out. Should works be identified as required within the footprint of the SSSI at a later date, an assessment of effects would need to be included within the Environmental Statement.	The potential impacts of the proposed scheme on Marks Tey Brickpit SSSI have been scoped out of further assessment, as discussed in Chapter 10: Geology and soils, of the Environmental Statement [TR010060/APP/6.1] as no works will be undertaken within the SSSI.

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4.5.4	The Scoping Report does not provide sufficient evidence that the drainage and run off from the proposed scheme during operation would not result in significant effects to soils, groundwater or surface water in areas adjacent to the proposed scheme. On this basis, the Inspectorate does not agree that these matters can be scoped out of the Environmental Statement. Appropriate cross references with the road drainage and the water environment assessment should be made.	The groundwater quality assessment based on ground investigation findings can be found in Chapter 10: Geology and soils [TR010060/APP/6.1]. This includes the potential impacts of the proposed scheme on groundwater and surface water during construction, assessment of the likely significant effects on groundwater and surface water during construction, and the proposed monitoring programme for assessment of water quality during and post construction. Although operational effects on soils, surface water and groundwater have been scoped out of the geology and soils aspect, they are scoped into the road drainage and water environment aspect in terms of potential pollution from road runoff and drainage. Information on surface water, groundwater receptors and operational effects of the proposed scheme on controlled water receptors are covered in Chapter 14: Road drainage and the water environment [TR010060/APP/6.1].
4.5.5	The Inspectorate agrees that is unlikely for the human health of site users/general public to be significantly affected during the operational phase, and therefore this matter can be scoped out of the Environmental Statement.	Noted and agreed. The potential risk to human health for site users and the general public during operation has been scoped out of the assessment.
4.5.6	Scoping Report paragraph 10.2.4 states 11 potential borrow pit locations identified along the proposed scheme were assessed in a Preliminary Sources Study Report (PSSR) in November 2019, followed by a ground investigation to enable selection of the most suitable sites, that will be shortlisted prior to statutory consultation. Paragraph 10.3.8 states that details of the geology and borehole records are also provided within the PSSR. As such, the PSSR should be included, or appended to the Environmental Statement and the locations of the potential borrow pits, and borehole locations should be presented on a figure(s).	The PSSR and associated Ground Investigation Report (GIR) include geotechnical information which is not relevant to the Environmental Statement. Appendix 10.1: Land quality risk assessment [TR010060/APP/6.3] provides a summary of the geology and land contamination aspects of the PSSR and GIR. Since the Environmental Scoping Report was published, the number of proposed borrow pits has reduced from 11 down to four. The location of the borrow pits and ground investigation sampling points are shown on Figure 10.1 of the Environmental Statement [TR010060/APP/6.2].
4.5.7	The superficial geology within the study area has potential to contain Pleistocene and Holocene deposits of archaeological and paleoenvironmental significance, as such, the Environmental Statement should assess potential impacts to superficial geology. For superficial geology, a detailed deposit model should be produced and presented within the Environmental Statement, to help characterise the depth, nature, date, and potential of layers of archaeological and paleoenvironmental significance. The deposit model can be used to inform borehole and geotechnical investigations, evaluation trenching, and geophysical survey, as well as assist in the preparation of the mitigation strategy. Relevant cross references between the deposit model data will have to be adequately cross-referenced with the heritage and hydrogeology chapters of the Environmental Statement.	An assessment of the impacts on Pleistocene and Holocene deposits of archaeological and paleoenvironmental significance and a detailed deposit model has been commissioned to investigate this issue. The results have been used to inform future archaeological mitigation where necessary and also to inform the design of borrow pit extraction areas to avoid locations considered to be of higher potential. The results of the assessment are included in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] and Appendix 7.3: Palaeolithic desk-based assessment [TR010060/APP/6.3] and cross referenced in Chapter 10: Geology and soils and Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].
4.5.8	The results of any additional ground investigations should be presented within, or appended to the Environmental Statement. This information also needs to be adequately cross-referenced with heritage and archaeology, and hydrogeology.	The results of the Palaeolithic assessment are included in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] and Appendix 7.3: Palaeolithic desk-based assessment [TR010060/APP/6.3] and cross referenced in Chapter 10: Geology and soils and Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].
4.5.9	Paragraph 10.3.9 states that the SSSI is 150m north-west of junction 25, but the correct distance is 115m; and the SSSI is 95m from the red line boundary on the GIS shapefile. The Environmental Statement should report accurate distances from the proposed scheme to receptors.	The correct distances have been used for the Environmental Statement.
4.5.10	The results of the further agricultural land classification (ALC) survey should be included within the Environmental Statement. The Environmental Statement should also include a figure(s) depicting the ALC of the soil within the Order Limits and the Environmental Statement should state the area of each soil classification that will be impacted, explaining what efforts to avoid use of Best and Most Versatile Land have been employed in the design of the proposed scheme.	A detailed site-specific ALC survey has been undertaken for the proposed scheme, with the full report presented in Appendix 10.2 of the Environmental Statement [TR010060/APP/6.3].

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4.5.11	Limited information on surface water and groundwater receptors is provided in Chapter 14 and there is limited cross-referencing between these two aspect chapters. The Environmental Statement should ensure that groundwater receptors are described in detail and cross references are included between the two aspect chapters. Reference is made to a report titled A12 Junction 19 to 25 Surface Water Monitoring Factual Report, but this report is not included within the Scoping Report. This report, and any additional reports, surveys or investigations should be included within, or appended to the Environmental Statement.	Cross references between the two chapters and which chapter covers what information in relation to water receptors has been included in the relevant topic chapters of the Environmental Statement [TR010060/APP/6.1]. References to the A12 Junction 19 to 25 Surface Water Monitoring Factual Report have been removed from the Environmental Statement [TR010060/APP/6.1].
4.5.12	The Environmental Statement should also consider potential impacts caused by accidental spills of oil, fuel, coolant, and other chemicals during construction; along with mitigation measures set out in a Construction Environmental Management Plan.	Effects from road runoff, drainage, and pollution incidents have been assessed in Chapter 14: Road drainage and the water environment [TR010060/APP/6.1]. Mitigation measures have been set out in Chapter 10: Geology and soils [TR010060/APP/6.1] and also in the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5].
4.5.13	The Environmental Statement should provide further details on how soils are managed once stripped, including sustainable topsoil and subsoil separation, stockpiling, and reinstatement.	Measures to be adopted for sustainable reuse of soil resources disturbed by the proposed scheme have been included in Section 10.10 of Chapter 10: Geology and soils [TR010060/APP/6.1] and also in the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5]. One of these measures includes the production of a Soil Handling Management Plan during construction.
4.5.14	The Environmental Statement should summarise the results of the existing desk-based study and append the report to the Environmental Statement.	Appendix 10.1: Land quality risk assessment [TR010060/APP/6.3] provides a summary of the geology and land contamination aspects of the PSSR and GIR.
<b>Materials assets and waste</b>		
4.6.3	The Applicant proposes to scope out operational impacts (on material assets and waste) based on the assumption that no significant maintenance activities will occur during the opening year. The Inspectorate agrees that this matter can be scoped out of the Environmental Statement on the basis of the reasoning presented.	Noted and agreed. Operational effects on material assets and waste have been scoped out of the Environmental Statement as per the rationale provided in Section 11.9 of Chapter 11: Material assets and waste [[TR010060/APP/6.1].
4.6.4	The Scoping Report has not provided sufficient information that evidences no significant effects will occur (to material assets). The Inspectorate does not agree that this matter can be scoped out of the Environmental Statement on the basis of the reasoning presented. As per the Errata sheet, the following correction was issued by the Planning Inspectorate (15 March 2021): <ul style="list-style-type: none"> <li>Row ID 4.6.4 was included in the Scoping Opinion in error and can be disregarded.</li> <li>Impacts associated with material assets and waste during operation of the proposed scheme can be scoped out of the Environmental Statement, as per row ID 4.6.3 of the Scoping Opinion.</li> </ul>	Noted and agreed. Operational effects on material assets and waste have been scoped out of the Environmental Statement as per the rationale provided in Section 11.9 of Chapter 11: Material assets and waste [[TR010060/APP/6.1].
4.6.5	The locations of waste facilities that may be used to dispose of the proposed scheme's waste should be described within the Environmental Statement. The vehicle movements associated with the transportation of waste should be incorporated into any construction vehicle assumptions used to underpin other environmental assessments.	The locations of waste facilities that may be used to dispose of the proposed scheme waste have been described within Section 11.8 of Chapter 11: Material assets and waste [TR010060/APP/6.1]. Vehicle movements associated with the transportation of waste have been included in the construction heavy goods vehicle (HGV) numbers used within the Transport Assessment [TR010060/APP/7.2] and associated modelling which has been used to underpin the other environmental assessments in the Environmental Statement. Within Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1], in order to estimate greenhouse gas (GHG) emissions associated with the transportation of waste materials, the transportation distance for waste materials disposed of off-site has been assumed to be 50km.
4.6.6	The Environmental Statement should state how the design and mitigation measures, including the Site Waste Management Plan (SWMP) and Responsible Sourcing Plan (RSP) will be secured through the DCO or other legal mechanism.	The design and mitigation measures in Chapter 11: Material assets and waste [TR010060/APP/6.1] include how mitigation measures, including the SWMP and Sustainable Procurement Plan (SPP) will be secured and monitored.

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<b>Noise and vibration</b>		
4.7.3	The Inspectorate agrees that significant vibration effects during operation are unlikely to arise and this matter can be scoped out of the Environmental Statement.	Noted and agreed.
4.7.4	The construction noise study area within the Environmental Statement should also include haul roads and any other part of the local road network that is likely to be impacted by an increase in traffic that could result in significant noise impacts.	Figure 12.1 [TR010060/APP/6.2] shows the areas included in the construction noise study area. The use of haul roads and any other part of the local road network that are impacted by an increase in traffic have been considered in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].
4.7.5	The Scoping Report omits information on ecological sensitive receptors. The Environmental Statement should state all ecological receptors that could be impacted by the noise effects arising from the construction and operation of the proposed scheme. The Environmental Statement should include a figure(s) depicting the locations of the sensitive receptors including ecological receptors.	The ecological sensitive receptors are shown on Figure 12.2 [TR010060/APP/6.2]. This figure also shows the other noise sensitive receptors. Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] considers the ecological receptors that are impacted by noise.
4.7.6	Scoping Report paragraph 12.4.1 states: <i>'Impacts from construction can be defined as those that occur between the start of advanced works and the end of the Proposed Scheme construction period'</i> . The Scoping Report does not define 'advanced works' making the scope of the construction noise assessment unclear. In the absence of this definition and to ensure the full extent of construction noise impacts are assessed, the construction noise assessment should commence from the start of the construction. The Environmental Statement should define 'advanced works' if this term is to be used within the Environmental Statement.	The construction assessment described within Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1] includes all works.
4.7.7	Where piling is required during construction, the Environmental Statement should state the locations of the piling activities and show these locations on a figure(s).	Locations where piling may take place are shown on Figure 12.3 [TR010060/APP/6.2].
4.7.8	Scoping Report paragraph 12.5.9 states that professional judgement will be used to determine areas to benefit from enhancement measures based on knowledge gained from other projects. The Environmental Statement should ensure any decision based on professional judgement is clearly set out and explained.	Sections where professional judgement has been used has been noted and explained within Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].
4.7.9	Where night working is required, the location of the night working and the effected receptors should be stated in the Environmental Statement.	The activities likely to require works to be undertaken at night are described within Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1]. The effected receptors or groups of receptors are also identified in Chapter 12.
4.7.10	Scoping Report paragraph 12.6.4 states that some receptors may be subject to significant operational noise effects for which mitigation would not be possible or due to their cost effectiveness. In developing mitigation proposals, the Applicant must clearly identify receptors that are subject to residual significant effects and demonstrate how the requirements of the Noise Policy Statement for England have been applied for the proposed scheme.	The proposed scheme has been judged against the aims of the Noise Policy Statement for England (NPSE). Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1] clearly identifies receptors that are subject to residual significant effects and justifies why mitigation cannot be applied.
4.7.11	The Scoping Report states that a noise survey will be taken at 11 locations for a period of one week to ascertain the baseline noise level across the proposed scheme study area, these locations are presented on Figure 12.1. No explanation for why these 11 locations have been chosen is included within the Scoping Report, and no explanation as to the omission of noise monitoring in Chelmsford or the numerous small settlements in proximity to the south of the proposed Order Limits have been chosen. The Environmental Statement should explain why the 11 noise monitoring locations are representative of the entire noise study area and state the reason for the noise monitoring locations chosen. Noise monitoring should be undertaken to a recognised standard such as BS7445-1:2003.	Appendix 12.3: Noise baseline survey results [TR010060/APP/6.3] explains the rationale behind the selection of monitoring locations and describes the locations they are considered to represent. This includes reasons for the omission of baseline surveys in some areas. Noise monitoring has been undertaken recognising standards such as BS7445-1:2003.

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4.7.12	The known noise levels of construction activities and equipment should be provided in the Environmental Statement, and the calculations used to determine the construction noise should also be provided.	This Environmental Statement contains quantitative predictions of construction noise from activities expected to be undertaken. This is described in Sections 12.9 and 12.11 of Chapter 12: Noise and vibration [TR010060/APP/6.1] with further details such as known noise levels and equipment provided within Appendix 12.4: Construction calculations [TR010060/APP/6.3]. The calculations have been undertaken using a computer modelling software that implements the calculation methodologies within BS 5228-1:2009+A1:2014.
4.7.13	The Environmental Statement should provide a figure(s) depicting the noise study area and all sensitive receptors, including ecological receptors.	Figures 12.1 and 12.2 [TR010060/APP/6.2] have been included within the Environmental Statement to show the operational noise study area and the noise-sensitive receptors. Figure 12.2 [TR010060/APP/6.2] also includes the noise-sensitive ecological receptors.
<b>Population and human health</b>		
4.8.3	On the basis that this matter will be assessed within the Environmental Statement geology and soils assessment, human health effects from large scale earthworks can be scoped out of the Environmental Statement population and health assessment.	Noted and agreed.
4.8.4	The human health study area for air quality and noise should also include the area surrounding construction compounds and borrow pits. Within the Environmental Statement, a figure depicting the study area should also depict equestrian routes.	The study areas for human health and land use and accessibility are provided on Figure 13.1 of the Environmental Statement [TR010060/APP/6.2] while bridleways are indicated on Figure 13.2 of the Environmental Statement [TR010060/APP/6.2].
4.8.5	The Scoping Report states that many properties are within 10 to 20m of the existing A12 but does not provide any further information on the amount of properties situated that close to the existing road. To aid the reader in understanding the extent of the impacts on residential properties, the Applicant may wish to provide the number of residential properties situated within proximity to the existing A12 route.	This was not done at scoping as the design was evolving. Further detail is now provided in Section 13.7 of Chapter 13: Population and human health [TR010060/APP/6.1].
4.8.6	Within the Environmental Statement, sensitive community assets that are included within the assessment should be presented on a figure(s).	This is provided on Figure 13.1: Population and human health context [TR010060/APP/6.2].
4.8.7	The locations of temporary and permanent loss of residential, commercial, community or agricultural land should be presented within a figure within the Environmental Statement. Where demolition of properties is required, the locations of the properties to be demolished should be depicted on a figure(s) within the Environmental Statement.	Figure 13.2 [TR010060/APP/6.2] shows land use and accessibility impacts.
4.8.8	The Environmental Statement should provide a figure(s) depicting where severance to residential, community, commercial, agricultural and PRowS is likely to occur. The Environmental Statement should also state whether the severance would be permanent or temporary, and if any alternate routes or entrances would be provided. Where severance of agricultural access is required, the Environmental Statement should ensure any alternative access provided is suitable for agricultural vehicles. The Environmental Statement should provide justification for any permanent severance and set out why no alternative access routes would be required.	Figure 13.2 [TR010060/APP/6.2] shows land use and accessibility impacts (including on farm holdings and other land use assets). This figure includes all public rights of way, and where temporary and permanent diversions and permanent closure of sections of public rights of way are required. Wherever there is a severance to access, alternative access will be provided including for agricultural vehicles, where required.
4.8.9	Where PRowS are to be diverted and/or reinstated, the Environmental Statement should take into account the impact that any additional length in PRow could have on the users of the PRow. The Environmental Statement should also take into account the potential impact on amenity to PRowS if they are diverted or reinstated closer to a main road or other pollution pathway. The length of time that a PRow would be impacted should be stated in the Environmental Statement.	The detailed assessment in Appendix 13.3: Land use and accessibility assessment tables [TR010060/APP/6.3] describes these impacts on PRow.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.8.10	The location, dimensions and lighting strategy for bridges and underpasses should be included within the Environmental Statement.	Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] describes the works on existing and new structures, as well as the lighting design. Structures are visually shown on Figures 2.1 and 2.3, of the Environmental Statement [TR010060/APP/6.2].
4.8.11	Scoping Report paragraph 13.5.7 states that best practice mitigation measures will be implemented to alleviate the impact on affected PRowS, but does not provide further details. A description of the best practice measures that will be implemented should be included within the Environmental Statement.	Mitigation measures are described in the Section 13.9 of Chapter 13: Population and human health [TR010060/APP/6.1]. They are also included in the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5].
4.8.12	Details of the methodology, location and timespan of the Walkers, Cyclists and Horse Riders Assessment and Review (WCHAR) surveys to be undertaken should be included within the Environmental Statement.	The Environmental Statement has drawn on other sources of data to inform how well various routes are used. In particular Strava Heatmap data has been used which is more reliable than the 'snapshot' provided by surveys. The data sources used are set out in Section 13.7 of Chapter 13: Population and human health [TR010060/APP/6.1].
<b>Road drainage and the water environment</b>		
4.9.3	Paragraph 14.4.24 of the Scoping Report states that flood risk from canals has been scoped out. On the basis that the impact of flooding from the Chelmer and Blackwater Navigation is considered in terms of fluvial flooding risk, the Inspectorate does not agree that flood risks from canals can be scoped out of the Environmental Statement.	The proposed scheme does not cross the Chelmer and Blackwater Navigation, however, Appendix 14.5: Flood risk assessment [TR010060/APP/6.3] includes an assessment of potential risk from the Navigation. Canals are scoped into the assessment in Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].
4.9.4	The Inspectorate agrees that flooding due to reservoir failure may be scoped out of detailed assessment on the basis that such reservoirs are subject to a monitoring and maintenance regime and the probability of an event is low.	Noted and agreed.
4.9.5	The Inspectorate agrees that coastal flooding can be scoped out of the Environmental Statement as the proposed scheme is not located near the coast, and as stated in Scoping Report paragraph 14.4.27, none of the watercourses within the study area are tidal.	Noted and agreed.
4.9.6	The Environmental Statement should provide robust justification for the chosen 1km study area, and the Applicant should make effort to consult with the relevant consultation bodies regarding the study area of the assessment.	Further consultation has been undertaken with the relevant bodies and these discussions are detailed in Section 14.3 of Chapter 14: Road drainage and the water environment [TR010060/APP/6.1]. The chapter also fully considers potential impacts even if they extend beyond the 1km extent as stated in the Environmental Scoping Report.
4.9.7	Scoping Report paragraph 14.3.12 states that a desk-based assessment that was undertaken of the existing drainage network between J19 and J25 of the A12, however no further information on this desk based assessment has been provided. This information should be included within, or appended to, the Environmental Statement.	Appendix 14.6: Surface water drainage strategy [TR010060/APP/6.3] includes details of the existing drainage network between junctions 19 and 25.
4.9.8	The Environmental Statement should include full details of all existing drainage infrastructure that is to be impacted/ demolished and the new drainage infrastructure that is to be constructed. A figure(s) should be provided within the Environmental Statement that presents the locations and changes to be made to the drainage infrastructure. Furthermore, the Environment Agency in their consultation response (see Appendix 2 of the Scoping Opinion) raised concern with the existing drainage infrastructure potentially resulting in water quality declines in watercourses once they cross the existing A12. The Environmental Statement should address this matter and effort should be made to consult on the drainage infrastructure with the Environment Agency and other relevant consultation bodies.	Appendix 14.6: Surface water drainage strategy [TR010060/APP/6.3] takes account and includes details of the existing drainage network between junctions 19 and 25. Annex A: Drainage layout plans, in Appendix 14.6 show existing drainage catchments, existing retained outfalls and culverts. An initial assessment has been completed, however, how these would be affected by the proposed scheme will be considered as part of detailed design. Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1] and Appendix 14.1: Water quality assessment report [TR010060/APP/6.3] includes an assessment of the impact of the proposed scheme on existing water quality of receiving waterbodies.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.9.9	The Scoping Report states that historical map analysis indicates little change to drainage ditches since 1876. The Inspectorate notes that in places within the study area of the proposed scheme there have been considerable changes to field boundaries and drainage ditches since the late 19 <sup>th</sup> century, and the Environmental Statement should have more effective cross-referencing between historic map regression undertaken as part of the heritage assessment chapter and the flood, drainage and water quality section.	Historic map regression has been undertaken in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. This does not include a ditch by ditch assessment as this is considered to be a level of detail greater than that required for the DCO application. High-level analysis of the historical changes to drainage channels has been carried out and described in the Hydromorphology Assessment (Appendix 14.3 [TR010060/APP/6.3]).
4.9.10	The Scoping Report states that continuous groundwater monitoring, initially for a 12-month period, is to be undertaken in a number of boreholes across the area of the proposed scheme. Monitoring data should be provided with the Environmental Statement.	Data plots have been included in Appendix 14.4: Groundwater assessment [TR010060/APP/6.3].
4.9.11	Analysis of existing groundwater abstraction and potential future changes to this in the Environmental Statement must be adequately cross-referenced to the geoarchaeological section of the heritage chapter, in addition to soils and geology.	Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1] cross references with Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. An assessment of changes in groundwater levels has been undertaken in Chapter 7 to determine if there are any effects on heritage assets.
4.9.12	The Environmental Statement should assess and state any potential impacts that the construction and operation of the proposed scheme could have on existing agricultural drainage systems, and how these impacts could affect the surrounding agricultural land.	The impact of the proposed scheme on agricultural drainage is considered in the Water Management Plan, which is an appendix to the first iteration EMP [TR010060/APP/6.5], with any impacts included within the Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].
4.9.13	Details of flood compensation areas, upgrading of structures to improve conveyance, and improved defences to prevent any increases in flood risk should all be included within the Environmental Statement.	Appendix 14.5: Flood risk assessment [TR010060/APP/6.3] provide details of all the flood risk mitigation measures (including floodplain compensation) to ensure no increase in flood risks as a result of the proposed scheme.
4.9.14	The potential location of piling or dewatering work should be identified and presented within the Environmental Statement.	The risk of dewatering in relation to piling activities has been identified and presented in Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1] and Appendix 14.4 Groundwater assessment [TR010060/APP/6.3].
4.9.15	The Environmental Statement should include a detailed Surface Water Drainage Strategy including the locations and dimensions of any sustainable drainage systems (SuDS). The Environmental Statement should also include a figure(s) depicting the locations of SuDS.	Appendix 14.6: Surface water drainage strategy [TR010060/APP/6.3] includes details of proposed SuDS. The locations and further details of SuDS are shown on the Drainage and surface water plans [TR010060/APP/2.13].
4.9.16	The Environmental Statement should set out where flood plain compensation land will be located, how this location was determined and effort should be made to agree the location of flood plain compensation land with the relevant statutory consultation bodies. The Environmental Statement should also include a figure(s) depicting flood plain compensation land.	Appendix 14.5: Flood risk assessment [TR010060/APP/6.3] includes plans and descriptions of the proposed mitigation (including floodplain compensation) that informs the assessment of impact reported. Flood risk mitigation is also shown on the Environmental Masterplan (Figure 2.1 of the Environmental Statement [TR010060/APP/6.2]). Discussions have been held with regulators throughout the development of the Environmental Statement to present, discuss and seek acceptance of proposed mitigation measures.
<b>Cumulative effects assessment</b>		
4.11.3	The Scoping Report proposes to scope out an assessment of material assets and waste, and climate change within the Environmental Statement Assessment of cumulative effects chapter due to these matters already being assessed on a regional scale within their respective aspect chapters. On this basis, the Inspectorate agrees that these matters can be scoped out of the cumulative assessment within the Environmental Statement.	Noted and agreed.
4.11.4	The air quality and noise Zone of Influence for construction activity should include construction compounds, borrow pits and haul roads.	The Order Limits for the proposed scheme includes construction compounds, borrow pits and haul roads.

Scoping Opinion ID	Scoping Opinion comment	National Highways response
4.11.5	Paragraph 16.3.25 states that effects will be identified as ' <i>short term or long term, permanent or temporary</i> ' but does not provide a definition of these terms. The Environmental Statement should define these terms in relation to the cumulative assessment.	The Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1] is based on the assessment findings in the individual aspect chapters, together with the assessments reported by others for other developments. Where such terms are used, they are as defined in individual aspect chapters.
4.11.6	Intra-cumulative impacts on PRowS and bridleways arising from potential air quality, noise and severance impacts should be assessed within the Environmental Statement.	The land use and accessibility assessment presented in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] and Appendix 13.3: Land use and accessibility assessment tables [TR010060/APP/6.3], considers the impact on the amenity of PRow which relates to the combination of impacts such as noise, air quality, visual intrusion and changes to route alignment, where relevant.
<b>Information sources</b>		
5.2.2	Applicants are also advised to review the list of information required to be submitted within an application for Development as set out in The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009.	The DCO application includes the information required as set out in The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009.

Table 1.2 Anglian Water comments and responses

Anglian Water comment	National Highways response
<p>Anglian Water would welcome further discussions with Highways England prior to the submission of the Draft DCO for examination. In particular it would be helpful to discuss the following issues:</p> <ul style="list-style-type: none"> <li>• Wording of the Draft DCO including protective provisions specifically for the benefit of Anglian Water</li> <li>• Requirement for water and/or wastewater services</li> <li>• Impact of development on Anglian Water's existing assets and the need for mitigation if required</li> <li>• Pre-construction surveys</li> </ul>	<p>Numerous discussions have been held with Anglian Water and the A12 project team. The proposed scheme will continue to liaise with Anglian Water to agree the wording for Protective Provisions benefiting Anglian Water. The proposed scheme has identified any potential clashes with Anglian Water existing assets and has realigned the Order Limits to avoid these clashes.</p>
<p>There are existing water mains, foul and surface water sewers and associated pumping stations in the vicinity of the site which potentially be affected by the above development. These assets are critical to enable us to carry out Anglian Water's duty as a statutory sewerage undertaker. It is therefore suggested that the Environmental Statement should include reference to the water supply network, public sewerage network and associated pumping stations where relevant.</p>	<p>Utility diversions are described in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1]. Diversions are shown visually on the Utilities Works Plans [TR010060/APP/2.2.2].</p>
<p>Reference is made to a flood risk assessment being prepared for the above development. The Scoping Report identifies a need to further assessment of the potential risk of flooding from different sources including sewerage infrastructure which is welcomed. At this stage it is unclear whether there is a requirement for a connection(s) to the public sewerage network for the above site or as part of the construction phase. We welcome the intention to have further consultation with Anglian Water and other relevant bodies in respect of the drainage strategy for the above project.</p>	<p>Liaison has been undertaken with regulators throughout the development of the Environmental Statement [TR010060/APP/6.1]. It is anticipated that connections for water supply would be required, while wastewater is uncertain at this time subject to local constraints.</p>
<p>Anglian Water is responsible for managing the risks of flooding from surface water, foul water or combined water sewer systems. Consideration should be given to all potential sources of flooding including sewer flooding as part of the Environmental Statement and related flood risk assessment.</p>	<p>Appendix 14.5: Flood Risk Assessment [TR010060/APP/6.3] considers the interaction of the proposed scheme with all sources of flooding.</p>
<p>The report states that the risk of sewer flooding is likely to be low. We would suggest reference is made to any relevant records in Anglian Water's sewer flooding register as well as other information relating to flood risk as outlined in the report. Information can be obtained by contacting Anglian Water's Pre-development Team. The e-mail address for this team is as follows: <a href="mailto:planningliaison@anglianwater.co.uk">planningliaison@anglianwater.co.uk</a></p>	<p>A request for sewer flooding history information was made to Anglian Water on 3 November 2021 and at time of writing are still awaiting a response.</p>

Table 1.3 Bradwell Power Generation Company Ltd comments and responses

Bradwell Power Generation Company Ltd comment	National Highways response
<p>Bradwell B supports the provision of enhanced highways infrastructure on the A12; however, it is important that the Environmental Statement recognises the interrelationship of the A12 to A120 widening scheme with the Bradwell B project from a number of perspectives, which are detailed below. Bradwell B support the recognition of the Bradwell B Project in the cumulative assessment. This will be particularly important in the early years of the construction of Bradwell B when there is the most opportunity for temporal overlap.</p>	<p>Bradwell B is included as Planning ID 32 in the short list of projects for the cumulative effects assessment in Chapter 16, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>There are some common sensitive receptors within the north Dengie Peninsula, for instance in Maldon and Danbury (where there is an existing Air Quality Management Area) in relation to traffic impacts. In addition, one of the search areas for park and ride that Bradwell B consulted on at Stage One is located in close proximity to the southern extent of the Order Limits of the proposed scheme and therefore there is the potential for cumulative air quality, noise, landscape and heritage effects which should be taken into account. We would welcome close working with Highways England on cumulative effects and the application of relevant and consistent environmental baseline data.</p>	<p>Bradwell B is included as Planning ID 32 in the short list of projects for the cumulative effects assessment in Chapter 16, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Subject to obtaining the necessary consents, there is the potential for the works to junction 19 to be ongoing during the early years of construction of Bradwell B. Junction 19 is an important link to the Strategic road network, and the Order Limits are located within close proximity to one of the Bradwell B search areas for park and ride. We would welcome working with Highways England to ensure that the works can be carried out safely without an undue effect on the construction programme for Bradwell B.</p>	<p>A meeting was held on 4 February 2021 to discuss data availability and process for assessing construction (and operational) traffic associated with the construction of Bradwell B. A further meeting was held 14 June 2021 where it was agreed that Bradwell B would be scoped out of cumulative traffic assessment as the construction timescales for Bradwell B do not overlap significantly with the proposed scheme. The peak year of construction for Bradwell B is expected to be early 2030s (based on DCO approval in late 2026 / early 2027 and assuming 10-12yr construction period). However, Bradwell B is included as Planning ID 32 in the short list of projects for the cumulative effects assessment in Chapter 16 of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Traffic associated with the construction of Bradwell B should be factored into the assessments during construction, opening year and in a future year for the widening scheme, assuming worst-case figures. There is information available in the Bradwell B Stage One consultation about the potential HGV movements associated with the project and we would be happy to engage with Highways England to provide further information on anticipated traffic flows and distribution to assist in the assessment.</p>	<p>A meeting was held 4 February 2021 to discuss data availability and process for assessing construction (and operational) traffic associated with the construction of Bradwell B. A further meeting was held 14 June 2021 where it was agreed that Bradwell B would be scoped out of cumulative traffic assessment as the construction timescales for Bradwell B do not overlap significantly with the proposed scheme. The peak year of construction for Bradwell B is expected to be early 2030s (based on DCO approval in late 2026 / early 2027 and assuming 10-12yr construction period). However, Bradwell B is included as Planning ID 32 in the short list of projects for the cumulative effects assessment in Chapter 16 of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The operational assessment should also include operational traffic associated with Bradwell B.</p>	<p>Operational traffic for a new nuclear power station is not likely to be significant as it's expected to include mainly workers (low hundreds, on shifts), who will tend to live within commuting distance i.e. 30-60mins. Outages will periodically see a significant increase in maintenance workers e.g. 1,000 for small number of months.</p>

Table 1.4 Cadent Gas Limited comments and responses

Scoping Opinion comment	National Highways response
<p>Cadent has identified at this stage the following apparatus within the vicinity of the proposed works:</p> <ul style="list-style-type: none"> <li>• High pressure and intermediate pressure (above 2 bar) gas pipelines and associated apparatus</li> <li>• Low and medium pressure gas pipelines and associated above and below ground apparatus</li> </ul> <p>Where diversions of apparatus are required to facilitate the proposed scheme, discussions between parties should be started at the earliest opportunity. It is essential that adequate temporary and permanent land take, land rights and consents are included within the Order to enable works to proceed without delay and to provide appropriate rights for Cadent to access, maintain and protect apparatus in future.</p> <p>If diversions of Cadent apparatus are required, Cadent will require adequate timescales prior to the submission of the DCO to undertake essential feasibility studies to provide Highways England with the necessary information to consider as part of their application. Please be aware that diversions for high pressure apparatus can take in excess of two years to plan and procure materials. Where the Promoter intends to acquire land, extinguish rights, or interfere with any of Cadent's apparatus, Cadent will require appropriate protection and further discussion on the impact to its apparatus and rights including adequate Protective Provisions.</p>	<p>Discussions with Cadent have been ongoing throughout the preparation of the DCO application.</p>

Table 1.5 Chelmsford City Council comments and responses

Scoping Opinion comment	National Highways response
<p>Chelmsford City Council has reviewed the scoping opinion and is satisfied with its contents with the exception of the sections of the report which refer to baseline modelling and the assessment of cumulative impacts.</p> <p>The development used in the baseline modelling scenario for the junction 19 modelling must take full account of the recently adopted Chelmsford Local Plan (May 2020). The City Council asserts that due to the strategic nature of the Chelmsford Garden Community (CGC) proposals (Strategic Growth Site 6 of the Adopted Chelmsford Local Plan), its support by Homes England, the detailed masterplanning work which is currently underway and on the basis that the Garden Community is a continuation of the Beaulieu and Channels development sites, both of which are at an advanced stage of construction by the same promoters/developers, the 3,000 new homes in the adopted Chelmsford Local Plan should be classified as 'More Than Likely' using Highway England's table to ascertain degrees of certainty for development proposals. A masterplan is due to be approved in 2021 for the CGC with planning applications expected in late 2021, all before the submission of the DCO in March 2022.</p> <p>Further, this categorisation, should also apply to Strategic Growth Site 8 for 450 new homes North of Broomfield, where a masterplan has now been approved by the City Council and where a planning application is expected before Christmas. The City Council sees no rationale for leaving these sites out of the modelling baseline.</p>	<p>The process for developing the future traffic growth forecasts has been undertaken in line with TAG guidance. Following liaison with Chelmsford City Council and Essex County Council (ECC) in 2021, the proposed 3,000 homes in North East Chelmsford has been included within the Core scenario, as are the proposed 450 homes North of Broomfield.</p>

Table 1.6 Colchester Borough Council comments and responses

Colchester Borough Council comment	National Highways response
<b>Air quality</b>	
<p>The Environmental Scoping Report proposes an assessment of air quality in relation to the proposed widening of the A12 between Chelmsford to the A120 using the DMRB LA105 design manual for air quality.</p> <p>The proposed air quality assessment methodology is acceptable however we would like to draw attention to the air pollution hotspot on the A120 in Marks Tey. The scoping report neglects monitoring data collected by Colchester Borough Council in 2019 which suggest relatively poor air quality on the A120 approx. 1km from the A12 junction 25. Air quality conditions at this location are described in the 2020 Colchester Borough Council Air Quality Annual Status Report and it is essential that any comprehensive assessment takes this into account.</p>	<p>The latest available representative monitoring data (i.e. 2019) have been collated for the relevant local authorities and presented in Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1]. Pollutant concentrations have been modelled at worst case receptors (e.g. those expected to experience the highest pollutant concentrations and / or greatest changes in pollutant concentrations) have been selected within the study area. In this air quality assessment within 200m of roads where air quality traffic screening criteria are exceeded. The assessment includes receptors located beside the A120 between Great Tey Road and junction 25 as shown on Figure 6.9 [TR010060/APP/6.2].</p>
<b>Arboriculture</b>	
<p>The survey methodology is fine and the inhouse team are in agreement with it. We suggest a canopy cover assessment is undertaken to show the total loss so that it can inform mitigation proposals in the future.</p>	<p>Appendix 8.4: Arboricultural Impact Assessment [TR010060/APP/6.3] includes plans that illustrate trees at risk of removal following a red/amber/green process. This indicates canopy loss based on canopy shape plotting undertaken. Information relating to tree spacing and density has been collected as part of the arboricultural survey and is included within the Arboricultural Impact Assessment. This information has been used to help inform the landscape mitigation presented on Figure 2.1: Environmental Masterplan [TR010060/APP/6.2].</p>
<b>Archaeology</b>	
<p>We can confirm that we support with the definitions and interpretation of the historic environment given by the NNNPS, and the emphasis placed in the sustaining and enhancement of heritage assets. From an archaeological point of view, we support the use of a study area defined by a 300m buffer surrounding the provisional Order Limits (paragraph 7.2.2), and are encouraged to see that designated heritage assets within a 1km radius of the Order Limits have also been included in the assessment (paragraph 7.2.3).</p>	<p>Noted and agreed.</p>
<p>We note that heritage assets recorded in the Essex Historic Environment Record at May 2018 have been used to inform the baseline assessment of the study area (paragraph 7.3.2). However, we would draw the applicant's attention to the fact that the Colchester administrative area is no longer covered by the Essex Historic Environment Record, and that the definitive archaeological record for Colchester borough is the Colchester Historic Environment Record. It is not clear from the Scoping Report whether the desk-based assessment referenced in paragraph 7.3.2 has been informed by material held in the Colchester HER and we have yet to receive a copy of the desk-based assessment for review. It should also be noted that Historic Environment Records are continually being updated, and so the baseline data from 2018 should be updated to the present for inclusion in the full Environmental Statement.</p>	<p>The desk-based assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] has been updated and includes data from the Colchester Historic Environment Record (HER).</p>
<p>With regard to designated heritage assets, it should be noted that Colchester borough maintains a 'local list' of heritage assets, which includes historic buildings and archaeological site designated by the Council. Details of these have been integrated into the Colchester HER and can be made available on request.</p>	<p>The desk-based assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] has been updated and includes data from the Colchester HER, including locally listed buildings.</p>
<p>Regarding the significance summaries provided in Table 7.1, we would caution against taking too prescriptive an approach to the value of classes of heritage asset, as individual sites or features within particular feature or period classes may not all be of equivalent significance. It is also recognised that non-designated heritage assets can be considered to be of equivalent significance to designated heritage assets, and as such the potential remains for individual sites and features to belong to higher categories. With regard to the 'negligible' category in Table 7.1, it should be noted that an undated cropmark feature may still have a higher archaeological significance, which may only become apparent following its excavation or wider contextual analysis. Caution should be exercised in drawing such conclusions without ground-truthing. Similarly, while archaeological findspots may be considered to be of low significance, they may individually or collectively represent the surface trace of more significant sites, which will only be fully appreciated through further evaluation and ground-truthing.</p>	<p>Table 7.1 was not intended as a prescriptive definition of the value of asset types, it merely provided examples. The value of heritage assets has been individually assessed and included in Appendix 7.1: Cultural Heritage Gazetteer [TR010060/APP/6.3]. The assessment has been updated with further survey information.</p>

Colchester Borough Council comment	National Highways response
<p>It should be noted that the cultural heritage assets listed in the gazetteer (Appendix F) and illustrated in Figure 7.1 present an assessment of the significance of known archaeology, and the scoping report has identified high potential for presently unknown archaeological remains to lie within the route. We would also express caution as to the assessments of significance ascribed to individual heritage assets, which cannot be critiqued in more detail at this stage without access to the full desk-based assessment.</p>	<p>Table 7.1 was not intended as a prescriptive definition of the value of asset types, it merely provided examples. The value of heritage assets has been individually assessed and included in Appendix 7.1: Cultural Heritage Gazetteer [TR010060/APP/6.3]. The assessment has been updated with further survey information.</p>
<p>With regard to the statement given in 7.7.4, that the archaeological desk-based assessment will be used to inform the Environmental Statement, we would reiterate that the desk-based assessment undertaken by Jacobs in 2018 may not have been informed by the contents of the Colchester Historic Environment Record and that the data within the DBA will need to be updated to reflect additional data acquired since 2018.</p>	<p>The desk-based assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] has been updated and includes data from the Colchester HER.</p>
<p>Overall, we welcome the conclusion that impacts on archaeological remains, historic buildings and historic landscape types during construction have been scoped in for further assessment (paragraph 7.4.5). We also support the conclusion that the impact on archaeological remains and historic buildings during the operation of the road are also scoped in for further assessment (paragraph 7.4.10). We agree with the statement in paragraph 7.5.2 that mitigation is likely to include a programme of archaeological investigation and recording prior to the commencement of construction. We welcome the acknowledgement in paragraph 7.5.3 that there is the potential for enhancement of the historic environment and look forward to working with the applicant to ensure that opportunities are developed as appropriate.</p>	<p>Noted and agreed.</p>
<p>We continue to support the necessary programme of archaeological evaluation, comprising geophysical survey and trial-trenching surveys, which will be used to inform the Environmental Statement (paragraph 7.7.3). Discussions are ongoing with the applicant's representatives as to the scale and scope of these evaluation works, and we will continue to work with the applicant in order to ensure that these provide a suitable assessment of the depth, character and extent of any heritage assets which may lie along the route so that suitable mitigation strategies can be developed and implemented.</p>	<p>Noted and agreed.</p>
<p><b>Heritage (above ground)</b></p>	
<p>The Council have reviewed the Cultural Heritage Chapter (No.7 p.56-66) concerning the potential impacts on above and below ground heritage assets (both designated, non-designated and as yet unknown) from the constructional and operational phases of the preferred route (Option 2). Apart from some v minor omissions (principally 7.3.2 Baseline evidence base needs to include Colchester HER, and table 7.1 omits grade II listed buildings – medium sensitivity?) The scope of the study appears otherwise sound and comprehensive based on Option 2. It is necessary for the Environmental Statement to include an evaluation of the alternatives considered and the comparative impacts arising from these alternatives. In addition, the cumulative impacts arising from planned development needs to be factored in (although the rejection of the Colchester: Braintree Borders Garden community has removed this potential in the Colchester Borough area to a large extent).</p>	<p>Grade II listed buildings are assessed of high value as per DMRB LA 106, in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. Chapter 3: Assessment of Alternatives, of the Environmental Statement [TR010060/APP/6.1] include an evaluation of the alternatives considered and the comparative impacts arising from these alternatives. Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1] covers the cumulative impacts arising from other planned developments.</p>
<p>The 1km catchment area for designated heritage assets seems reasonable apart from a wider consideration of the potential impact upon assets of the greatest sensitivity (Scheduled Monuments, Grade I listed buildings and Registered Parks and Gardens) where a greater catchment area should be considered where the wider landscape makes a significant contribution to their significance and design mitigation may be required/desirable?</p>	<p>A flexible approach has been adopted when identifying high value assets (all grades of listed buildings are high value/sensitivity) on which there may be impacts on their setting in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. This has been guided by professional judgement and the extent of the proposed scheme's Zone of Theoretical Visibility prepared as part of the Landscape and Visual Impact Assessment in Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1]. The assessment also considers any physical and historical connectivity and relationships with other monuments and the wider landscape.</p>

Colchester Borough Council comment	National Highways response
<p><b>Landscape</b></p> <p>Several hedges on along the line of the proposed A12 widening route are protected under the Hedgerows Regulations 1997 and would appear to require removal in whole or part to allow for construction. Any hedge is classified as 'Important' under the Regulations would normally be retained fully intact and existing gaps utilised within these hedgerows for any proposed breach points. If not classified as 'Important', then sections of hedgerow could be removed to facilitate development. Note: hedgerow surveys to identify the Importance of hedges protected under the Regulations are carried out by the local planning authority. A clause needs to be added (at clause at 8.7.4) to acknowledge this constraint and how it is proposed to be addressed.</p>	<p>In line with the DMRB LA 107 Landscape and Visual Effects (Highways England, 2020), Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] considers the effect on the constituent landscape features and elements/components of the landscape character areas in combination as part of the effects on landscape character and not as individual receptors. Important hedgerows have been surveyed and an assessment of hedgerows against the biodiversity criteria within the Hedgerow Regulations (1997) has been undertaken as part of Chapter 9: Biodiversity [TR010060/APP/6.1] and is reported with Appendix 9.7 Hedgerow Survey Report [TR010060/APP/6.3]. An assessment of hedgerows has also been undertaken as part of Chapter 7: Cultural heritage [TR010060/APP/6.1], which concludes that no hedgerows relevant to the proposed scheme meet the archaeology and history criteria for Important Hedgerows. Mitigation measures and how these will be secured are included within the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5]. [TR010060/APP/6.5]. Important Hedgerows affected by the proposed scheme are listed within Schedule 9 of the draft Development Consent Order [TR010060/APP/3.1].</p>
<p>Regarding clause 8.7.5, comment on Appendix G2 and Fig 8.3 was submitted on 30/10/20, it read:</p> <ul style="list-style-type: none"> <li>• Viewpoint 17 - consider relocating or adding viewpoint at junction of PRoW 145_5, 145_17 &amp; 92_20, where there would be an open, panoramic, elevated view of the proposed scheme.</li> <li>• Suggested additional viewpoint at junction of PRoW 128_22 and Easthorpe Road, where there would be open fairly panoramic views of the proposed scheme.</li> <li>• Viewpoint 20 - looks fine, subject to the most exposed viewpoint being used once detail scaled-up.</li> <li>• Viewpoint 21 - look for revised location along PRoW 128_18 where there would be actual views of the proposed scheme.</li> <li>• Viewpoint 22 - looks fine, subject to the most exposed viewpoint being used once detail scaled-up.</li> <li>• Suggested additional viewpoint from PRoW 144_18 looking north toward the proposed scheme, where there would be very open panoramic views.</li> <li>• Viewpoint 23 - looks fine</li> <li>• Viewpoint 24 - looks fine, subject to the most exposed viewpoint being used once detail scaled-up.</li> <li>• Viewpoint 25 - consider relocating or adding viewpoint at the important field that forms the separation between Marks Tey and Copford as there are views of the A12 across this field from the enlarged field entrance and as maintaining the existing character of the field is important to maintaining the separation between the 2 settlements.</li> <li>• Viewpoint 26 - looks fine</li> </ul>	<p>The representative and illustrative viewpoints assessed within Chapter 8: Landscape and visual [TR010060/APP/6.1] have been defined and refined in accordance with suggestions raised through consultation with local planning authorities and Historic England. This includes the addition of representative viewpoints 27, 28 and 29, which were incorporated within further landscape consultation with local planning authorities and Historic England in February and September 2021.</p>

Colchester Borough Council comment	National Highways response
<p><b>Noise and vibration</b></p> <p>The proposed bypass between junctions 24 and 25 will move the main flow of traffic away from densely populated areas at Marks Tey, some of which are subject to high ambient noise levels from the existing A12, which could potentially bring benefits.</p> <p>The scoping of both construction phase and operational phase noise/vibration is welcomed.</p> <p>Robust baseline surveys are essential, particularly where the proposed bypass and new junction is close to sensitive receptors.</p> <p>Impact assessment should consider the likely significant effects of the proposal both without and with intervention measures added (i.e. mitigation, compensation). This enables consultees and decision makers to have a better understanding of the potential project effects and the relative importance of individual interventions thereby promoting a more robust assessment.</p> <p>Likely significant impacts on individual isolated properties should be assessed and reported where necessary rather than aggregated.</p> <p>Night working in close proximity to sensitive receptors should be avoided unless absolutely necessary.</p>	<p>The noise assessment in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1] considers the proposed scheme with and without mitigation measures. Likely significant effects are considered and reported at individual isolated properties in Chapter 12.</p> <p>Night working will be avoided where possible but will be undertaken for activities where unavoidable (such as bridge demolition). Measures to reduce the impact from noise during construction works will be contained within first iteration of the Environmental Management Plan [TR010060/APP/6.5].</p>
<p>The study areas detailed in paragraphs 12.2.2 and 12.2.3 of 100m for construction vibration, 300m for construction noise and 600m for operational noise are noted, with scope to increase these distances if deemed necessary.</p> <p>We are pleased that potential reduced traffic flows owing to COVID-19 restrictions will be taken into account when considering baseline surveys.</p> <p>Impact on future sensitive receptors as mentioned in paragraph 12.3.11 should be included.</p> <p>We welcome the source-pathway-receptor approach to mitigation. Low-noise surfaces should be used in the proximity of sensitive receptors.</p> <p>Communication with residents as detailed in paragraph 12.5.2 is highly recommended.</p> <p>A complaint management system (paragraph 12.5.3) is essential.</p> <p>It should be ensured that baseline monitoring takes place at sensitive properties close to the proposed bypass between junctions 24 and 25 and the new junction at Marks Tey.</p>	<p>The baseline surveys were successfully completed in May 2021 and are reported in Appendix 12.3: Noise baseline survey results [TR010060/APP/6.3].</p> <p>Several future developments that have planning permission have been included within the noise assessment as sensitive receptors. These are listed in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].</p> <p>Low noise surfacing has been used as the preferred mitigation measure, with such measures described within Chapter 12.</p> <p>Communications with local residents is already underway and will be continued throughout the proposed scheme. The management of complaints process is outlined within the first iteration of the Environmental Management Plan [TR010060/APP/6.5].</p> <p>Several properties between junctions 24 and 25 have been included as baseline monitoring locations. These are shown on Figure 12.1: Noise Study Areas, Noise Important Areas and Noise Monitoring Locations [TR010060/APP/6.2].</p>

Table 1.7 Environment Agency comments and responses

Environment Agency comment	National Highways response
<b>Chapter 2: The proposed scheme</b>	
<p>Table 2.2 includes in respect of 'An improved environment', a scheme specific objective to: 'Reduce the impact of new infrastructure on the natural and built environment'. Given that this proposal will involve replacement and upgrades to existing infrastructure which currently performs poorly in terms of protecting the water quality and ecological value of adjacent waterbodies; we would suggest that this objective should be to: 'Reduce the impact of new and existing infrastructure on the natural and built environment.'</p>	<p>Wherever possible, opportunities have been explored to reduce the impacts on existing infrastructure.</p>
<b>Chapter 9: Biodiversity</b>	
<p>Over many years it has been observed that Essex rivers which are crossed by the A12 trunk road have been badly affected by past engineering treatment which has left a lasting effect. Upstream of the A12 the rivers and watercourses are often in a much healthier state than the sections downstream indicating point source pollutions and other negative impacts. Previous engineering changes affect the ability of wildlife to pass up and downstream freely or the natural morphological function which affects flow or sediment transport. As an example of this, the current A12 crossing of the River Brain downstream of Witham has a concrete cill which holds up water and forms an unnatural and harmful barrier to flows and the ecological corridor. These site specific issues should be identified and resolved wherever possible.</p> <p>There are also instances of apparent water quality declines at the crossings as a result of poor quality run-off. The invertebrate fauna downstream is less diverse than upstream and appears to be causing a progressive decline as the problems are not resolved. Many of the current crossings would not be permitted in the same form today and we wish to see the environmental issues recognised and mitigated for in this widening scheme.</p> <p>Much of the widening of the A12 will have the potential to cause further ecological problems in terms of mammal passage for otter, water vole and in-channel passage for fish and eels. Longer or additional crossings can exacerbate the existing issues making protected species less likely to utilise the longer underpasses beneath the carriageways. During high flows, otter in particular will avoid difficult and dark traverses upstream and can become road casualties as a result. The A12 Colchester bypass is currently a particular otter death black spot.</p> <p>Bridges and culverts also have known negative impact on rivers as wildlife corridors for invertebrates towards the bottom of the food chain. Dragonflies, mayflies and others are known to navigate by using the horizontal polarization of water reflected light. Bridges, especially long ones or low culverts prevent adult insects moving through darker crossings up and downstream.</p> <p>In the light of the negative impacts of the existing A12, a full assessment and improvement of the current drainage system will be required to prevent deterioration under the Water Framework Directive; this is likely to include for example the provision of pollution interceptors and balancing ponds etc. Without this, the A12 and associated roads (especially the proposed de-trunked A12 sections) will risk causing failings under the Water Framework Directive.</p>	<p>Engagement with the Environment Agency biodiversity, geomorphology and ecologist specialists has been undertaken to ensure that new or modified highways structures minimise habitat loss and fragmentation effects.</p> <p>The provision of new highways drainage networks on online sections of the proposed scheme is anticipated to improve the quality of runoff to receiving watercourses compared to the existing situation. This is discussed in Chapter 14: Road drainage and the water environmental, of the Environmental Statement [TR010060/APP/6.1].</p> <p>Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] and Appendix 14.2: Water Environment Regulations (WFD Regulations) Compliance Assessment [TR010060/APP/6.3] outline the effects from both the new/modified structures and water drainage on the baseline conditions within the watercourses. Design, mitigation and enhancement measures are described, where necessary to mitigate for significant effects on biodiversity in Chapter 9.</p>
<p><b>Clear Span Bridges and well-designed wide culverts</b></p> <p>Multiple road crossings of watercourses can present a particular problem on what should naturally be rich habitats along important wildlife corridors.</p> <p>There should be a preference for clear span bridges rather than culverts. At each crossing opportunities should be taken to better the existing arrangements by ensuring there is more natural bank retained and channel habitat restoration before crossings are built.</p> <p>Long culverts are particularly problematic for otter passage. This issue can be designed out with wider, generous passage and clear span bridges wherever possible.</p> <p>Design will need to respect the ecology and hydromorphology of the river corridor. We recommend that a geomorphologist is involved in the design process. We suggest that the applicant uses the new biodiversity river metric to ascertain impacts on watercourses and what mitigation and enhancement measures are required. This will quantify the impacts of the proposal and ensure that there is sufficient provision for biodiversity and habitat.</p>	<p>Clear span bridges have been considered at all crossings; however, they were not a practicable option for the proposed scheme.</p> <p>New and modified culverts have been designed where practicable to allow safe passage by wildlife under all flow conditions through the provision of mammal ledges above the 1 in 100 year flood level. The biodiversity river metric (Defra 3.0) has been used to assess impacts to watercourses, as set out in Section 9.13 of Chapter 9 [TR010060/APP/6.1]. Geomorphologists from the water team have been involved throughout the design process.</p>

Environment Agency comment	National Highways response
<p><b>Attenuation pond design</b></p> <p>These should be constructed to be wildlife friendly – shallow edges, wavy margins, and designed so that they always contain a small area of standing water. An adequate footprint should be allowed for at an early stage to incorporate these design features. There are also opportunities for these features to be managed into the future with wildlife in mind, for example by sowing native wild flower mix for pollinators around the margins.</p>	<p>The footprint of attenuation ponds has been increased to allow for shallow margins to provide wildlife friendly habitats. The proposed scheme will also incorporate native wild flower mix in the margins to provide resource for pollinators. These mitigation measures are shown on Figure 2.1: Environmental masterplan [TR010060/APP/6.2] and discussed in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p>
<p><b>Lighting</b></p> <p>The proposed lighting of the new widened section will need careful assessment and design to prevent light pollution impacts on river and watercourse biodiversity.</p>	<p>The impacts of lighting are considered in Chapter 8: Landscape and visual and Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p>
<p><b>SSSIs</b></p> <p>SSSIs have been scoped out of the current assessment as there are none within 2km of the road. However, internationally designated sites further afield which are often designated for the same features have been scoped in. Where there is potential for impact on downstream rivers and associated habitat there will be a possible effect for further than 2km. Failing drainage systems or culverts can, as demonstrated by the existing road, cause a limiting effect on the habitat downstream by disconnecting the wildlife corridor and prevent the ecosystem working as a naturally functioning whole. We would therefore expect any SSSIs downstream with water connectivity to be scoped in for assessment.</p>	<p>Since the time of writing the Environmental Scoping Report, Tiptree Heath SSSI and the River Ter SSSI have been scoped in and are included in the assessment in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p>
<p><b>Chapter 10: Geology and soils</b></p>	
<p>We are generally satisfied that, for issues within our remit, the baseline conditions and relevant issues affecting land quality have been identified. The Environment Agency should be consulted regarding any land contamination risk assessments and remediation measures.</p>	<p>Consultation with the Environment Agency on potential contaminated land issues has been undertaken during the preliminary stage of the proposed scheme and as part of PEIR. The feedback received has been reported in the relevant sections of Chapter 10: Geology and soils, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Paragraph 10.3.18: Historic landfills. It is important to note that the nature of the waste taken in by historical landfills is not known such that those recorded as taking inert waste may have accepted sources of contamination. Environment Agency records indicate that the historical Perry Road landfill to the south of Witham took hazardous waste.</p>	<p>The proposed scheme encroaches the historical landfills at Witham near junction 21 and the London Road historical landfill near junction 25. The ground investigation (GI) of the London Road landfill has been completed and the findings have been reported in the Chapter 10: Geology and soils, of the Environmental Statement [TR010060/APP/6.1]. The GI of the land adjacent to the A12 through the historical landfill at Witham was completed in January 2022.</p>
<p><b>Chapter 14: Road drainage and the water environment</b></p>	
<p>Generally, in terms of water resources and water quality, we are satisfied with the information provided in the scoping report. We note the references to surface water and groundwater abstractions in proximity to the area of planned works and that more information will be sought in respect of groundwater abstractions in particular (both licensed and unlicensed). As well as licensed surface water abstractions there could possibly also be de minimus surface water abstractions (&lt;20m<sup>3</sup>/d). Identifying these is not straightforward. It is possible, given the nature of the proposed scheme, that landowners would raise this with the developer, but this should be further considered.</p>	<p>For groundwater, the local authorities have been contacted for the small (&lt;20m<sup>3</sup>/day) groundwater abstractions and data have been obtained. There is always the uncertainty that there are other groundwater abstractions which are not registered with the councils. These may be identified during consultation if the owners have concerns.</p> <p>Further information is provided regarding licensed surface water abstractions in Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The scoping report acknowledges the risks to the water environment from construction and operation and that mitigation measures will be identified and incorporated into the design and assessment. We would however just highlight that there is no reference to any water resource requirements for the widening scheme, for compound facilities or construction processes. This possible requirement should be considered.</p>	<p>The impact of all construction activities on water resources have been considered and reported on within Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The preliminary WFD assessment in appendix K appears appropriate at this stage and looks to cover the areas required. It should highlight the two key objectives for WFD of no deterioration in waterbody status and the ultimate aim of improving all waterbodies to 'Good' status. General impacts identified currently appear to be negative, negligible or no change. There will also be the potential for positive impacts. The 2019 classification status is now available and should be used in the next stages of the assessment.</p>	<p>The preliminary WFD assessment has been updated in Appendix 14.2: Water Environment Regulations (WFD Regulations) Compliance Assessment [TR010060/APP/6.3] to inform the Environmental Statement [TR010060/APP/6.1] and covers these elements.</p>

Environment Agency comment	National Highways response
<p>Considering Groundwater issues specifically; overall we can confirm we are satisfied that baseline conditions have been suitably characterised by desk study and will be supplemented by groundwater level and quality data. We can confirm that the scoping report has identified potential issues affecting groundwater flow and quality, along with appropriate methodologies for dewatering and piling risk assessments and outline mitigation measures. Please note our further comment below regarding the possible need for abstraction licences.</p>	<p>Noted.</p>
<p>In respect of flood risk, the scoping document has adequately considered the relevant issues. It appears that the proposed flood risk assessment (FRA) will contain all the required information to assess the flood risk impacts of the temporary and permanent construction works.</p> <p>We are encouraged that the proposed river crossings will be sited outside of the floodplain wherever possible, and where they need to be within the flood zones clear span bridge structures will be utilised wherever possible. We also agree with the proposals to provide flood compensation areas, upgrading of structures to improve conveyance, and improved defences to prevent increases in flood risk if structures are required to be located within the floodplain.</p> <p>The FRA will include flood modelling of the watercourses to be affected by the works, and will show that the proposed works have been designed to prevent an increase in flood risk elsewhere. The FRA will take account of climate change over the lifetime of the development. For essential infrastructure this should currently be a 65% increase in flow. Please be aware that the fluvial climate change allowances are in the process of being updated, and the new allowances should be published early next year.</p> <p>The FRA will ensure that the proposed works will not have an adverse effect on main river flood zones, and also on ordinary watercourses; both those large enough to have associated flood zones, and smaller watercourses. For the smaller watercourses, the FRA will consider the impacts on the associated flood outlines shown on the Flood Map for Surface Water, to ensure that overland flow paths and flood storage volumes are maintained throughout.</p> <p>Finally in respect of flood risk, we would also just reiterate that an Environmental Permit for Flood Risk Activities may be required for works in, under, over, or within 8m of a fluvial main river, and from any flood defence structure or culvert. Application forms and further information can be found at: <a href="https://www.gov.uk/guidance/flood-risk-activities-environmental-permits">https://www.gov.uk/guidance/flood-risk-activities-environmental-permits</a>. Anyone carrying out these activities without a permit where one is required, is breaking the law.</p>	<p>Noted.</p>
<p>As highlighted above, the 2019 WFD classification status is now available and can be found on the catchment explorer. Below is a link to the Blackwater catchment (combined Essex) as an example. <a href="https://environment.data.gov.uk/catchment-planning/WaterBody/GB105037041160">https://environment.data.gov.uk/catchment-planning/WaterBody/GB105037041160</a> Specific pollutants, priority substances and hazardous priority substances need to be considered.</p>	<p>The preliminary WFD assessment has been updated in Appendix 14.2: Water Environment Regulations (WFD Regulations) Compliance Assessment [TR010060/APP/6.3] to inform the Environmental Statement [TR010060/APP/6.1].</p>
<p>Paragraph 14.3.71 states: '<i>Ponds and un-named watercourses are unlikely to be more than low importance. However, a precautionary approach has been taken and therefore a medium value has been assigned to all but geomorphology. Receptors and attribute importance will be reconfirmed at the next stage of assessment</i>'. These smaller watercourses will form part of the wider WFD waterbodies (catchment maps can be provided). We would not expect to see lower levels of treatment being provided in these tributaries.</p> <p>The River Chelmer, River Blackwater and Roman River are all used for drinking water abstraction. These rivers and associated upstream tributaries also need to be taken into account when considering value of the receptor.</p>	<p>The assessment in Appendix 14.2: Water Environment Regulations (WFD Regulations) Compliance Assessment [TR010060/APP/6.3] will be revisited at detailed design to update assessment values, and therefore risks. In terms of impacts to smaller watercourses/tributaries under WFD, they would be considered as part of the impact to the downstream watercourse designated as the WFD water body.</p>
<p>Table 14.6. In terms of value to the owners, a domestic groundwater abstraction will be of very high value where it is the sole source of drinking water; risk assessments should reflect this.</p>	<p>It is standard in EIA to distinguish in terms of value between a public water supply borehole providing water to 1000s and a borehole supplying water to one property. Whilst the value of these receptors would be lower than a public supply borehole, the assessment in Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1] identifies if there is to be significant impact to the individual boreholes and provides details of mitigation required.</p>
<p>Paragraph 14.5.2 states: '<i>Controlled discharge to ground using infiltration techniques would be the preferred option (subject to the outcome of the ground investigation)</i>'. Reference should be made to our groundwater protection guidance. Our approach to groundwater protection and position statements can be found at: <a href="https://www.gov.uk/government/publications/groundwater-protection-position-statements">https://www.gov.uk/government/publications/groundwater-protection-position-statements</a></p>	<p>Based on the preliminary ground investigation it has been assumed the adoption of infiltration measures is not required. However, this will be investigated at detailed design, following further ground investigation. Reference to these documents is made in Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1], if required.</p>

Environment Agency comment	National Highways response
Paragraph 14.5.8 refers to the possible need for temporary dewatering. Dewatering operations may require an abstraction licence. The Environment Agency should be consulted early in the process to allow time for the licence determination process.	Should temporary dewatering be required the Environment Agency would be consulted. Such matters would be discussed with the Environment Agency as the design evolves and would be recorded in a Statement of Common Ground.
Paragraph 4.5.13 states that water quality mitigation will be identified through HEWRAT. Assumptions and limitations of using this method will need to be clearly identified. Reference should also be made to the Essex County Council SuDS Design Guide 2020 (and the SUDS guidance at <a href="https://www.susdrain.org">https://www.susdrain.org</a> ) which provides guidance on water quality. It should be ensured that any opportunities to provide additional water quality treatment infrastructure beyond HEWRAT outputs are fully considered.	Appendix 14.1: Water Quality Assessment Report [TR010060/APP/6.3] contains the Highways England Water Risk Assessment Tool (HEWRAT) outputs as well as the assumptions and limitations. Reference has been made to the Essex County Council SuDS Design Guide and the SuDS guidance within this report. Opportunities for water quality enhancements beyond the HEWRAT outputs will be explored as the design develops.

Table 1.8 Essex County Council comments and responses

Essex County Council comment	National Highways response
<b>General comments</b>	
<p>As an organisation who has a major interest in the 'proposed scheme' given the potential wide reaching impacts of this scheme across Essex County, we are disappointed that we were given very little notice by the applicant that an Environmental Impact Assessment scoping report was going to be submitted to the Planning Inspectorate and given the chance to review and consider the documents prior to submission for example. This is particularly the case given the current Covid-19 Pandemic which the impact of this cannot be ignored. With the second wave now underway, the UK Covid-19 has affected the Councils' ability to comprehensively respond within the 28-day consultation period. We appreciate that this is a statutory consultation period and cannot be extended by the Planning Inspectorate. We nevertheless trust that our representations are valuable and that the Planning Inspectorate will continue to have the expertise required to respond comprehensively to the applicant's submission.</p>	<p>ECC has been a key consultee throughout the proposed scheme design development and EIA process. In addition to the formal scoping and statutory consultation, the Council have been regularly consulted at a member and officer level to gain their feedback on the design and assessment. Consultation feedback, where relevant to the EIA process, is set out in each aspect chapter (Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1]).</p>
<p>In relation to COVID-19, we wish to emphasise that the medium or long-term effects of Covid-19 are largely unknown at this time and we ask that the Environmental Statement considers the potential impacts of the virus across all environmental topics. Covid-19 'safe' development for example, may be different from similar development provided before the pandemic and could have different effects. Furthermore, it is acknowledged by the applicant that some of the site-based/survey work proposed as part of the scope may not be achievable, and traditional methods of public engagement may also be affected.</p> <p>We concur with the applicant that if this is the case, the applicant must work and have agreement with relevant consultees to agree a pragmatic way forward to identify viable and robust alternatives to the approach set out in this Environmental Scoping Report. We also ask that it should be clarified by the applicant if Covid-19 is expected to affect the proposed project timing of the proposed scheme. We therefore caveat that in addition to comments we provide as part of this response, we may have further comments as the proposal develops and potentially adapts to ever changing circumstances relating to the impacts of COVID-19.</p>	<p>Any limitations to the assessment in relation to COVID-19 are set out in the assumptions and limitations section of the aspect chapters (Chapters 6 to 15 of the Environmental Statement [TR010060/APP/6.1]).</p>
<b>Highways and transportation</b>	
<p>In considering the Scoping Report submitted by the applicant from a Highway and Transportation perspective, there are several comments and points of clarification. One of the main points of clarification, which will be explored in the table below in this section, is how will the A120 interlink with the proposed scheme for the A12. Previous documentation on proposals for the A120 and A12 have suggested varying schemes in relations to potential junction connections between the A120 and A12. Therefore, the Council wishes for more clarification on how the A120 and the proposed scheme for the A12 will interlink going forward.</p> <p>The Council also wishes to emphasise that the applicant must consider other large scheme proposals including, but not limited to, the proposed Bradwell B Nuclear Power station, the Chelmsford North East Bypass, the Lower Thames Crossing, Junction 28 of the M25, and many large-scale residential developments proposed across Essex. All these schemes in combination with the proposed scheme are likely to have many significant cumulative impacts on many aspects including the highway network across the County. Such cumulative impacts on the highway network and other topics areas explored therefore need to be investigated as referenced by the Applicant in Chapter 16 of the Scoping Submission.</p>	<p>The A120-A12 link is in the long list but not the short list in the cumulative effects assessment. It is now a National Highways RIS3 project and is not yet sufficiently progressed to include in the cumulative effects assessment for the proposed scheme.</p> <p>Other large development proposals have been further investigated as part of the Environmental Impact Assessment. With regards to Bradwell B and Chelmsford North East Bypass (CNEB), both these developments have been progressed to Stage 4: Assessment of cumulative effects within Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1]. Other large scale developments including, but not limited to, Lower Thames Crossing and Junction 28 of the M25 have been subject to further investigation and discussion with the proposed scheme traffic modelers and it has been determined that these developments would not be progressed to Stage 4: Assessment of cumulative effects.</p>

Essex County Council comment	National Highways response
<p>In terms of considering the impact of the proposed scheme on Public Rights of Way (PROWs) of which there are numerous that could be affected, unprecedented resource implication as a result of Covid-19 means that comprehensive comments cannot be provided at this time. However, cross references should be made to Public Health and Landscape comments which emphasises that the applicant must consider the impact of the proposed scheme on walking, cycling and horse riding (WCH) routes and the multi-functional benefits of such routes. Consideration should be given as to how active travel routes can be encouraged and any impacts of the proposed scheme on WCH routes can be mitigated and where possible enhanced, to provide a WCH legacy.</p>	<p>The WCH Team and population and human health specialist have liaised with ECC on where key opportunities for active travel can be found and addressed through the proposed scheme. Non-motorised user stakeholder workshops were held in December 2020, with additional sessions in June 2022. The routes are shown on the Streets, rights of way and access plans [TR010060/APP/2.6].</p> <p>Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1], Appendix 13.3: Land use and accessibility assessment tables and Appendix 13.4: Mental wellbeing impact assessment [TR010060/APP/6.3], provide an assessment of the impacts on WCH, including with regard to the likely impacts on health and wellbeing. This includes the benefits of active travel (i.e. regular physical activity) on physical and mental health, as well as the benefits of outdoor recreation on health. The impacts in terms of access to services and employment and to the countryside are also considered.</p> <p>National Highways has a policy to improve active travel provision through their schemes and this is the basis on which improvements have been identified and shown on the Streets, rights of way and access plans [TR010060/APP/2.6].</p>
<p>Reference should also be made to the successful HIF Bid (£218m) in August 2019 as including not just the Chelmsford North East Bypass (CNEB), but also the new Beaulieu Railway Station scheme. Particularly given that the SELEP monies has been directly allocated towards the station, and not the CNEB. Main construction works for the station are anticipated in 2023, with the station opening in 2025/2026. The new Beaulieu railway station will provide access to the Great Eastern Main Line (GEML) and allow trains to be able to pass each other at the new station to make the whole line more reliable. It will relieve crowding at Chelmsford railway station and act as a transport interchange to encourage sustainable travel by bus, cycle, electric vehicles and on foot to strategic and local housing development.</p>	<p>The Beaulieu Railway Station scheme is included in the short list of projects assessed in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The Council wishes to emphasise that it is essential that the proposed improvements to J19 of the A12 resulting from the CNEB are taken into account and are protected in the designs.</p>	<p>The proposed improvements to J19 of the A12 resulting from the CNEB have been taken into account within the design of the proposed scheme.</p>
<p>The following is not referenced in the Scoping report, but was in the Highways England Preferred route brochure in relation to potential connection with a new A120 - ECC seeks clarification that this remains the case and will be considered moving forward. <i>'We are considering whether we can remove junction 23, but with new access roads provided from Kelvedon to junction 22. The Government's Road Investment Strategy 2 (R/52) stated that the A12 scheme will need to take into account the evolving proposals for the A120 Braintree to A12 improvements. We therefore may need to include scope for a potential future road link joining to the proposed improvements to the A120 road.'</i></p>	<p>In 2020 the government announced the inclusion of the A120 Scheme within the RIS3 pipeline (a group of schemes being considered for potential inclusion in the RIS3 programme for delivery in 2025-2030). Work is progressing to validate all the previous work that has been done by ECC which would include a link to the A12. The two project teams are working together to reduce customer impact where practicable should the A120 be included within a future RIS period. Further information can be found in the Interrelationships Document [TR010060/APP/7.6].</p>
<p>The impact of retaining the by-passed sections as dual carriageway and national speed limit requires more in-depth investigation to prevent it becoming unsuitable for WCH.</p>	<p>To provide WCH provisions which are suitable and effective, the proposed scheme will apply the LTN 1/20 criteria of 'Coherent; Direct; Safe; Comfortable and Attractive'. The best way to utilise the former A12 carriageway has not yet been determined and will be determined in the de-trunking proposals in liaison with ECC.</p>
<p>There may be significant impacts on the current route as a result of the proposed works and traffic may seek alternative routes on the surrounding local network in particular Main Road Boreham and rural routes to the south that are already being used to avoid congestion and incidents on the A12. Measures, therefore, may be required to make these routes unsuitable. Any increase in traffic on these rural routes will have a negative environmental impact it will also impact on local residents and communities.</p>	<p>These issues have been considered and are reported in the Transport Assessment [TR010060/APP/7.2]. Environmental impacts associated with the increase in traffic have been assessed in the relevant aspect chapters (Chapters 6 to 15) of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Further information is required on this point to make informed comments on impact on the highway network if import of bulk material is required.</p>	<p>These issues are addressed in the Transport Assessment [TR010060/APP/7.2] and the Outline Construction Traffic Management Plan [TR010060/APP/7.7].</p>
<p>If the bypassed section of the A12 remains dual carriageway and national speed limit is kept, this could adversely impact on the need to create better facilities for WCH and could land lock some of these routes and activities between both routes. It is not clear how this would potentially fit with the Essex new Safer Greener Healthier agenda.</p>	<p>Consideration has been given to the opportunities that the detrunked sections of the proposed scheme may bring in terms of implications for WCH in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1]. However, proposals for the detrunked sections are not part of the proposed scheme included in the DCO application.</p>

Essex County Council comment	National Highways response
ECC acknowledges that the bus service along the A12 is referenced and the impact of the proposed scheme on the bus service needs to be fully investigated.	The proposed scheme may affect the availability of bus stops (for the better) but bus services themselves are a matter for the operator. Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] assesses impacts on bus stops.
The removal of at grade pedestrian crossings is welcomed. Areas where people do cross however, need to be identified to ensure adequate grade separated provision is made for these desire lines.	At the current preliminary design stage, the diverted routes have been identified and alternative routes proposed using existing and/or proposed new grade separated crossings so that no routes crossing A12 at grade are retained. The routes will continue to be developed at the detailed design stage in liaison with ECC, to ensure an effective replacement network is created that is appropriately signed for ease of use and to encourage the use of active travel modes.
<b>Economic development and skills</b>	
ECC acknowledges the potential economic opportunities that this proposed scheme could bring to our area, our residents and our businesses. This is highlighted in Table 2.2 of the scoping submission where one of the key objectives of the proposed scheme is highlighted to be supporting by economic growth by for example reducing congestion related delay, improving journey time reliability, and delivering infrastructure that advances and supports emerging strategic plans for housing, business investment and development. However, it is the Council' s view that the applicant has not sufficiently assessed and captured the socio-economic baseline for this development and has not scoped in detail around topic areas such as skills, education, workforce development or business engagement. As there is no specific chapter on Socio-economics, it is advised that to capture points highlighted above and in the table below, a separate chapter or a more explicit reference to socio-economic impacts is made in any future Environmental Statement.	In contrast to some of the other National Policy Statements, the National Policy Statement for National Networks does not require the applicant to include an assessment of socio-economic impacts in the Environmental Statement. Nevertheless, Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers impacts on socio-economics as one of the wider determinants of human health, under the heading 'Access to services, employment, education facilities and skills' and how these may influence health outcomes in local communities.
As in mentioned above, a number of NSIP proposals and sites for future development are being considered at this time, all of which will compete for employment and skills. Any future submission should take into account the cumulative impact of such growth and the availability of a trained skilled workforce across a wide area to make the most of employment opportunities, particularly necessary post COVID, and secure delivery.	Consideration of the contribution to cumulative impacts on employment and skills has been made in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].
The RIS objective of 'supporting economic growth' makes no specific reference to any scoping (planned or undertaken) around skills, education, workforce development or business engagement. For instance, we would have expected this scoping exercise to have reviewed data that supports workforce recruitment, skills and employment plans for the projects and how that complements the respective Local Plans and strategies around economic growth.	Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers opportunities to provide social value such as local employment.
The consultations undertaken to date, and those planned, make no reference to engagement with a key stakeholder of any NSIP i.e. training providers and business intermediaries. This means that the scoping exercise has not taken into account how local skills and education providers, including schools, colleges and universities, will play a part in the workforce planning and delivery of this project.	A commitment has been outlined in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] for the Principal Contractor to work with stakeholders to identify and set targets for local skills, training, apprenticeships, and other relevant socio-economic matters.
This section refers to the potential benefits including the facilitation of economic development and job creation etc. However, there does not appear to have been any scoping exercise done to assess the potential for job creation other than that in reference to new employment space. The project itself, as well as its supply chain, has job creation potential which should be scoped in the context of the benefit it could bring to the region.	Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers potential for employment and how these may influence health outcomes in local communities.
We would welcome a more explicit reference to the socio -economic/skills/education theme in the planned Environmental Statement. This should be a separate chapter or have a dedicated section within a chapter.	Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers impacts on socio-economics as one of the wider determinants of human health.
We welcome the potential opening up of opportunities for further businesses to locate to the area. However, it is not clear how this has been assessed/scoped and what interventions and incentives are in scope.	Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers opportunities to provide social value such as local employment.

Essex County Council comment	National Highways response
<b>Public health and wellbeing</b>	
<p>The current EIA Regulations identify the need to consider potential implications of a proposed scheme on human health. Furthermore, it is also recognised within the NPPF 2019 that '<i>planning decisions should aim to achieve healthy, inclusive safe communities</i>'. It is noted that the health impacts will be covered within the Environmental Statement and it is intended to form a dedicated Population and Health chapter within it. The inclusion of an integrated health impact assessment should also be considered as part of the EIA process (at a proportionate level suitable for a scheme of this nature) so to ensure that the impacts that may arise on the wider determinants are assessed. Any HIA should include potential impacts on health inequalities and specific groups known to be more significantly impacted by development.</p>	<p>Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] and its appendices 13.1, 13.3 and 13.4 [TR010060/APP/6.3] address impacts on human health. This includes a Mental Wellbeing Impact Assessment, a health evidence literature review and an assessment of health impacts, taking into account wider determinants of health. Health inequalities have been considered as part of this assessment and has informed one of the project commitments to advertise employment opportunities locally, including in Witham where there is higher than average levels of unemployment and income deprivation.</p>
<p>In developing health considerations as part of the Environmental Statement, we have the following points:</p> <ol style="list-style-type: none"> <li>1) The appropriate scientific and technical environmental teams should be engaged in the Environmental Statement to support the key impacts arising from environmental hazards on human health.</li> <li>2) Local emergency 'blue' light services should be engaged as part of discussions on emergency planning and safety for both road users and active travel users.</li> <li>3) Issues around severance and mitigation should be considered as part of the assessment including those who are active travel users or who are reliant on existing routes get to local social infrastructure including places of work or for education.</li> <li>4) The impact on active travel users including sensitive population groups should be considered including their safety and potential impacts on health arising from air quality are addressed as we are aware that those routes are used to access education or workplaces (as examples).</li> <li>5) Impacts on sensitive receptors, populations and communities should be included.</li> <li>6) All assessments should give consideration of the impact of physical harm as well as impacts on mental health (especially environmental noise impacts as an example).</li> <li>7) The impacts on socio-economics should be considered to be included so we can understand the impacts on local employment and any potential opportunities arising that might support skills, training, apprenticeships or local employment and how the proposed scheme will impact on local supply chains.</li> <li>8) The cumulative impacts should include an assessment on populations and health.</li> </ol>	<ol style="list-style-type: none"> <li>1) Appropriate expertise on environmental hazards such as air pollution, noise and contaminated land, have informed the population and health assessment reported in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1].</li> <li>2) Emergency 'blue' light services were consulted in a meeting dated 12 July 2021, and the Operational Safety team as part of the A12 project team has also provided input for the assessment of safety aspects reported in Chapter 13 [TR010060/APP/6.1].</li> <li>3) These issues are assessed in the land use and accessibility assessment in Chapter 13 [TR010060/APP/6.1] with greater detail on individual routes provided in Appendix 13.3: Land use and accessibility full assessment tables [TR010060/APP/6.3].</li> <li>4) No active travel routes have been identified as locations of AQO exceedances. However, the human health assessment does qualitatively address potential issues of air pollution on more sensitive groups. The assessment has not identified any specific locations where significant negative impacts are likely. In some places the main active travel route would be more separated from the trunk road conditions than the current alignment immediately alongside the trunk road, and therefore exposure for active travellers is expected to reduce.</li> <li>5) The health assessment in Chapter 13 [TR010060/APP/6.1] has sought to identify sensitive receptors, populations and communities. Information on how this has been done is set out in the methodology in Chapter 13 [TR010060/APP/6.1] and has informed some of the assessment conclusions in terms of whether an impact is judged likely to be significant or not.</li> <li>6) The assessment in Chapter 13 of the Environmental Statement [TR010060/APP/6.1] has sought to provide parity between consideration of physical and mental health and impacts.</li> <li>7) Chapter 13 [TR010060/APP/6.1] considers impacts on socio-economics as one of the wider determinants of human health, under the heading 'Access to services, employment, education facilities and skills' and how these may influence health outcomes in local communities.</li> <li>8) Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1] includes cumulative impacts on population and human health.</li> </ol>
<p>ECC would also like to highlight that Essex is a pilot site that supports the Sport England Local Delivery Pilot and as such, we seek assurance that any proposal supports the promotion of active design principles so that opportunities to increase physical activity via active travel are maximised.</p>	<p>The WCH design is having cognisance of LTN 1/20. The principles of active design will be discussed with the ECC WCH team at detailed design.</p>

Essex County Council comment	National Highways response
<p>The proposed scheme refers to junction 20a and junction 20b (Hatfield Peverel North) both being closed and replaced by a new junction 21 (Witham South) to the east of Hatfield Peverel, with a local access road back to Hatfield Peverel to provide a two way connection between Hatfield Peverel, the new junction 21, and Witham. This would also have a dedicated WCH route. Section 13.3.28 acknowledges that current footways and routes are not continuous, and the volume and speed of traffic on the A12 can act as a disincentive to their use as there is limited physical segregation provided. They are also relatively narrow, unclear, inconsistently marked and poorly signed. We therefore welcome proposals out lined in paragraph 2.4.8 and 13.4.24 which refers to the proposed scheme including improvements to facilities on routes away from the A12 to improve the suitability of these routes for WCH to use safely in preference to the A12.</p> <p>Paragraph 13.5.8 goes onto further state: <i>'Opportunities to create new WCH routes will be explored where important linkages between communities and facilities can be made. Furthermore, opportunities to improve the existing WCH infrastructure will be explored to improve the quality and capacity of cycling and pedestrian infrastructure which could contribute to improvements in health by promoting and encouraging healthier, more active lifestyles.'</i></p> <p>We ask that a dedicated walking, cycling and horse riding route between Hatfield Peverel, new junction 21 and Witham should be designed to enable a safe walking/cycling route for pupils in Hatfield Peverel to the new primary school at Lodge Farm. This is a potential requirement given the lack of capacity at schools in Hatfield Peverel. Any route should also be designed to be safe and as direct as possible, and to consider air quality impacts/mitigation. This would also benefit secondary age pupils being able to walk/cycle to the Maltings Academy, Witham from Hatfield Peverel and provide a necessary lasting legacy to WCH in association with the proposed scheme.</p>	<p>The poor existing provision is recognised, as is the importance of seeking improvements through the proposed scheme, to provide a walking/cycling route between Hatfield Peverel and Witham for travel between homes and education, employment, shops and services. The intention is that routes should be as Coherent; Direct; Safe; Comfortable and Attractive as possible, in line with the guidance in LTN 1/20.</p> <p>A WCH route will be provided on both sides of the A12 which will connect Hatfield Peverel to the new J21 and then to Witham. The route will not run alongside the A12 but it will run alongside the new local access roads, except for the section on the southern side of the A12 between J21 and Hatfield Peverel which will be away from the road. This is shown on the Streets, rights of way and access plans [TR010060/APP/2.6].</p>
<p>Paragraph 13.3.6 acknowledges that Table 13.2 includes 'some' of the housing allocations/applications within the study area. Are the other sites identified elsewhere? Further consultation should be undertaken with the relevant local planning authorities with specific guidance as to what sites should/ should not be included in this schedule with regards site threshold; stage of Local Plan preparation for allocated sites; and stage of planning application (outline/ approved etc).</p>	<p>The draft long list and short list of projects was included in the PEIR (used in the statutory consultation) and have been updated for use in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1]. The long and short lists are far more comprehensive than table 13.2 in the Scoping Report.</p>
<p>Reference should also be made to there being schools and nurseries in Hatfield Peverel and Rivenhall, namely Rivenhall C of E Primary School; Hatfield Peverel Infant School; St Andrews Junior School; Little Bears Nursery; Hatfield Peverel Nursery.</p>	<p>These schools and nurseries have been included in the baseline in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1]. However, no likely significant impacts on these receptors is considered likely.</p>
<p>Reference should be made to the committed Beaulieu Central, which has planning permission and will contain 62,000m2 of commercial space including a hotel and a 40,000m2 business park. This will be located in close proximity to the new station. Reference is only currently made to Springfield Business Park.</p>	<p>The Beaulieu Central scheme is in the short list of projects in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The industrial area is known as Eastways Industrial Estate and should be inserted for clarification.</p>	<p>The name has been updated as suggested in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Reference is made to the new Beaulieu Railway Station being operational in 2022. This is incorrect and the main construction works for the new station are anticipated in 2023, with the station opening in 2025/2026.</p> <p>The new station will not simply serve the new Beaulieu Park development, as referenced, and should be amended to read: The new Beaulieu railway station will provide access to the Great Eastern Main Line (GEML) and allow trains to be able to pass each other at the new station to make the whole line more reliable. It will further relieve crowding at Chelmsford railway station and act as a transport interchange to encourage sustainable travel by bus, cycle, electric vehicles and on foot to strategic and local housing development.</p>	<p>These have been updated as suggested in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Reference should be made to the committed Beaulieu Central, which has planning permission and will contain 62,000m2 of commercial space including a hotel and a 40,000m2 business park. This will be located in close proximity to the new station. Reference is only presently made to Springfield Business Park. Beaulieu Central should be treated as a very high receptor. Reference should also be made to Hatfield Peverel Primary school and The Maltings school, Witham given comments made to Table 2.3 and paragraphs 13.3.27, 13.3.28, 13.4.24 and 13.5.8 as above.</p>	<p>Baseline receptors have been identified where relevant. Due to the scale of the proposed scheme and its study area, the assessment has focused its reporting on those community and employment receptors which are within or touching the Order Limits, or which have direct access within the Order Limits, as these are the receptors that have the most potential to be affected by the proposed scheme. The baseline is described in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] and Appendix 13.3: Land use and accessibility assessment tables [TR010060/APP/6.3]</p>

Essex County Council comment	National Highways response
<b>Climate change</b>	
<p>From the Council's perspective, we acknowledge that the applicant has referred to the UK National Government commitment to reducing emissions by at least 100% of 1990 levels (net zero) by 2050. We would like to also highlight however, that ECC has inaugurated an independent, cross-party Essex Climate Change Commission of which findings will be published in the first half of next year. The applicant should have regard to this emerging advice within the Environmental Statement as it is expected to impact on local policies and aspirations relevant to the proposed scheme. More information on this Commission and more specific responses in relation to climate change methodology are provided in the table below:</p>	<p>The Essex Climate Change Commission published 'Net Zero: Making Essex Carbon Neutral' in July 2021, the contents of which are discussed in Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>There are no objections to the scope proposed for Chapter 15, climate change and GHGs, or to the proposed methodology. We note the importance of the hierarchy of avoidance and prevention of emissions first and the importance of reducing the impact of the proposed scheme to as close to net zero as possible should also be noted.</p>	<p>As described in Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1], a number of mitigation measures have been embedded within the proposed scheme in order to reduce greenhouse gas (GHG) emissions. Standard mitigation measures are also proposed in order to minimise GHG emissions during construction of the proposed scheme. In addition, a number of opportunities for enhancement have been identified to further minimise GHG emissions associated with the proposed scheme going forwards.</p>
<p>Currently CO<sub>2</sub> emissions have been estimated for the purpose of the scoping report, but the Council would like clarification that all GHGs, not just CO<sub>2</sub>, will be included in the Environmental Statement.</p>	<p>Where it is practical and proportionate to do so (e.g. where industry recognised emission factors are available), Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1] has considered emissions of the seven greenhouse gases that contribute to climate change (i.e. carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF<sub>3</sub>) and sulphur hexafluoride (SF<sub>6</sub>)). As required by DMRB LA 114, these emissions have been expressed throughout Chapter 15 as emissions of carbon dioxide equivalent (CO<sub>2</sub>e).</p>
<p>Whilst the national net zero GHG target of 2050 and carbon budgets have been recognised, the climate commitments of ECC should also be recognised. ECC has a commitment to formulate a Climate Action Plan to reduce carbon emissions across the county of Essex. In addition, ECC has inaugurated an independent, cross-party Essex Climate Change Commission with the purpose of:</p> <ul style="list-style-type: none"> <li>Identifying ways in which ECC can mitigate the effects of climate change, improve air quality, reduce waste across Essex and increase the amount of green infrastructure and biodiversity in the County, explore transport modal shift, research energy generation and fully engage with communities around behavioural change.</li> <li>Reducing the carbon footprint of both ECC and Essex as a whole - the Commission is expected to recommend an ambitious, but realistic target year, to have achieved net zero greenhouse gas emissions. The impact of the project on emissions within the county and potential impact on upcoming emissions reductions goals should also be noted.</li> </ul>	<p>Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1] provides an assessment of the potential impact of the proposed scheme on greenhouse gas (GHG) emissions during construction and over a 60-year operational appraisal period in accordance with DMRB LA 114. The spatial extent over which road user GHG emissions have been assessed, which covers a large part of the county of Essex, is shown on Figure 15.1 [TR010060/APP/6.2].</p> <p>Estimated changes in GHG emissions have subsequently been compared to relevant UK carbon budgets in line with DMRB LA 114.</p>
<b>Minerals and waste</b>	
<p>The paragraph refers to 'a large minerals proposal site identified by Essex County Council, with an active quarry at Colemans Farm, within the river valley at Rivenhall End.' It is not understood what is meant by a 'large minerals proposal site'. Assuming that this is not a phrase also describing Colemans Farm, it is further assumed that this is a reference to the fact that the proposed route lies within Mineral Safeguarding Areas (MSAs). Land within an MSA designation is not 'proposed' for extraction but does denote where mineral capable of being an economic resource is considered to be present, and where prior extraction should take place if practicable to avoid its sterilisation by non-mineral development.</p>	<p>The text in Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1] has been updated.</p>
<p>The provisions set out in paragraph 2.5.18 are welcomed. It is noted that the sustainable procurement provisions set out in paragraph 2.5.17 should extend to the sourcing of minerals/aggregate for construction, as subsequently recognised through paragraph 11.5.5.</p>	<p>The sustainable procurement provisions have been extended to the sourcing of minerals/aggregate for construction.</p>

Essex County Council comment	National Highways response
<p>Reference to the NNNPS's position regarding the implications of proposing non-mineral development on land safeguarded for minerals is noted. This states that <i>'where a proposed scheme has an impact on a Mineral Safeguarding Area (MSA), the Secretary of State should ensure that the applicant has put forward appropriate mitigation measures to safeguard mineral resources'</i>. The NNNPS further states that the NPPF is also likely to be an important and relevant consideration in decisions on nationally significant infrastructure projects, but only to the extent relevant to that project. This is highlighted to note that in relation to mineral resources, the NPPF states at paragraph 203 that <i>'Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation'</i> and that <i>'When determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy'</i>. These principles should be reflected in a Minerals Resource Assessment (see Appendix 2).</p> <p>As is appropriate, the Scoping Report notes that the various route options, including the Preferred, all present mineral safeguarding issues. Where it states in e.g. Table 3.3 in relation to route options that <i>'a mineral safeguarding area...would...be affected'</i>, it is noted that the area of land that would potentially be sterilised by the Preferred Option is significant.</p>	<p>Appendix 11.1: Mineral Resource Assessment [TR010060/APP/6.3] ensures the identification of any appropriate / viable mitigation measures to safeguard mineral resources.</p>
<p>Paragraph 11.3.11 relates to the sourcing of aggregate materials required for the construction of the proposed scheme, noting that <i>'Some of these materials would originate off site, purchased as primary construction products, but it is likely that some would arise onsite, particularly from the use of borrow pits'</i>. Sterilisation mitigation measures as required by national and local policy require that as much of the required aggregate as practical is prior extracted from land that would otherwise be sterilised by these proposals.</p>	<p>Appendix 11.1: Mineral Resource Assessment [TR010060/APP/6.3] ensures the identification of any appropriate / viable mitigation measures to safeguard mineral resources.</p>
<p>The table presents information relating to Land-won aggregate sales, reserves and landbanks in the East of England and Essex, 2018. This information is not disputed. However, also of relevance when considering the impact of the proposed scheme on local aggregate supply is the anticipated annual take of the project versus recent annual sales of this mineral over an appropriate geographic area. The vast majority of that aggregate referred to as <i>'remaining reserves'</i> is yet to be extracted and may not be programmed for extraction for many years. It is not therefore to be considered as necessarily available.</p>	<p>The anticipated annual aggregates consumption of the proposed scheme versus recent annual sales in the second study area (East of England) has been considered in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The inclusion of a list of safeguarded minerals infrastructure in Table 11.2 and Figure 11.2 is welcomed. This list has been updated through Appendix 1 of this report. Amendments relate to the removal of facilities, or an updated application reference. There are no additional sites.</p>	<p>The list of existing minerals infrastructure and designations has been updated in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1] to include the additional details provided by ECC. This has also been considered in the figures associated with Chapter 11 [TR010060/APP/6.2].</p>
<p>The comments in this Row relate to issues with respect to the way that the baseline for waste management, and in particular inert waste capacity, has been presented. The matters raised here do not amount to the Minerals and Waste Authority suggesting that there is a particular waste management issue at this stage but it is considered that these issues will require further consideration when more detailed assessment is carried out into waste likely arising from the site.</p> <p>Paragraph 11.3.36 states that the Essex Authority Monitoring Report 2017 to 2018 confirms there were an additional 17 applications granted in Essex during this period for transfer facilities, inert waste recovery facilities, materials/energy recovery facilities and disposal (landfill) facilities. Whilst true, the same document reports that the high number of applications received for determination did not yield substantial additional capacity. A number of these 17 applications related to supporting development at existing sites rather than authorising increases in capacity at new sites or otherwise.</p> <p>Paragraph 11.3.39 describes the number of landfill sites and their planning status using information drawn from the ECC (2017) Minerals and Waste Development Framework Authority Monitoring Report (AMR) 2016 to 2017. This was not the latest report available at the time the Scoping Opinion was put together (as evidenced by the use of the next iteration of the AMR to inform other sections. The latest available AMR at the time of production of the Scoping Opinion reports on there being fewer facilities than the source used.</p> <p>Table 11.4 presents available landfill capacity based on the EA (2020) Waste Data Interrogator 2018, noting that Essex capacity for non- hazardous landfill totals 15Mm<sup>3</sup>. As also presented in the table, the total amount of inert landfill contributing to that figure is 3.2Mm<sup>3</sup>. Subsequent tables amalgamate this figure. Whilst it is recognised that non-hazardous landfill sites can accept inert material such as CD, the MWPA requests that future assessments are based on dedicated inert landfill capacity, particularly in Essex, in the first instance.</p>	<p>The additional baseline information provided by ECC has been considered during the reporting of the baseline conditions in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1]. Future capacity assessments have been separated into inert and non-hazardous landfill classes for the former East of England Planning Region and Essex sub-region. Future forecasts have also included commentary regarding when sites, particularly inert landfill sites, are expected to close (no direct consultation with landfill operators has been undertaken). The assessment of the likely significant environmental effects associated with the off-site disposal to landfill of waste that would be generated by the proposed scheme, has been undertaken on a regional basis that takes account of the need for the interregional movement of waste within England, and reflects the fact that waste planning authorities have a statutory duty to plan for an appropriate amount of waste infrastructure capacity to be available over a defined time period and need to take account of waste that may need to be imported from other areas. Setting the second study area at the regional level (East of England) was also considered appropriate given the proximity of the proposed scheme to the neighbouring counties and recognising that cross-boundary movements of waste are likely to occur, whilst endeavouring to adopt the proximity principle where practicable. Impacts to landfill capacity has been assessed separately on a regional basis for (a) inert (b) non-hazardous and (c) hazardous landfill capacity. The response to IDSO241 explains how it is intended to assess the impacts of the proposed scheme across the lifecycle of the project construction.</p>

Essex County Council comment	National Highways response
<p>Paragraph 11.3.47 notes that in relation to the recycling and recovery of construction and demolition waste, it is expected that whilst the actual waste facilities available may change over the course of constructing the proposed scheme, the overall capacity is likely to remain similar as the market responds. In this context, the statement is accepted, but it is not necessarily considered true for inert landfill capacity.</p> <p>Paragraph 11.3.50 states that the forecasts of future landfill capacity do not include any additional capacity that may open in the future in the region. This is noted as being an appropriate approach. Future forecasts should however include commentary regarding when sites, particularly inert are expected to close if this is within the lifetime of project construction. An assessment of disposal capacity over the lifetime of the construction should also consider the economics of inert disposal and whether counting all available capacity in the East of England is appropriate.</p>	
<p>The inclusion of a list of safeguarded waste infrastructure in Table 11.5 and Figure 11.2 is welcomed. This list has been updated through Appendix 1 of this report. Amendments relate to the removal of facilities, or an updated application reference. There are no additions.</p>	<p>The list of existing minerals infrastructure and designations has been updated in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1] to include the additional details provided by ECC. This has also been considered in the figures associated with Chapter 11 [TR010060/APP/6.2].</p>
<p>As mentioned above, of relevance when considering the impact of the proposed scheme on local aggregate supply is the anticipated annual take of the project versus the annual sales of this mineral over an appropriate geographic area. The vast majority of that aggregate referred to as 'remaining reserves' is yet to be extracted and may not be programmed for extraction for many years. It is not therefore immediately available. Other assumptions are considered to be appropriate unless information is received to the contrary.</p>	<p>The anticipated annual aggregates consumption of the proposed scheme versus recent annual sales in the second study area (East of England) has been considered in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The sensitivity of receptor assessments are questioned. The Scoping Report states that there are no issues of significance when considered through the provisions of DMRB LA 110. However, DMRB LA 110 Table 3.13 states that where a 'project sterilises 1 mineral safeguarding site' then the significance category is 'Large'. The vast majority of the route is through a mineral safeguarding site. As such, the sensitivity assessment for Row 2 should be 'Large'. The significance of impacts is also held within DMRB LA 110 Table 3.13 as being a function of the proportion of the recycled aggregate to be used that is recycled material, and the proportion of material required that can be recovered on-site to reduce primary mineral use. These proportions are currently unknown so it is considered that at best the related significance in Row 1 should also be noted as being 'Unknown' rather than 'N/A'. Based on Table 3.14 of DMRB LA 110, this means that the impact on material assets is to be graded as 'significant'. It is noted that paragraph 11.6.1 states that the '<i>potential exists for significant effects on material assets and waste to occur from the depletion of natural resources, the sterilisation of mineral safeguarding sites and the use of landfill capacity</i>' so it is not understood why this is assessed as 'N/A' in Table 11.7.</p>	<p>The sensitivity of mineral sites is inherently considered as part of the assessment methodology in Chapter 11: Material assets and waste, of the Environmental Statement [TR010060/APP/6.1]. As stated in paragraph 11.3.55 of the Scoping Report whilst these receptors and an indication of their sensitivity have been summarised in Table 11.7, it should be noted that the DMRB LA 110 simplified significance framework precludes the need to assign a sensitivity rating to the identified receptors for the purposes of assessment. Significant effects for this aspect are to be determined based on the significance category descriptions provided Table 11.10 alone. The simplified assessment framework provided in LA 110 doesn't determine the significance of effect based on comparing the sensitivity of the receptor and the magnitude of impact, and hence the use of N/A is considered valid in Table 11.7. This has been clarified in Chapter 11 for the avoidance of any doubt.</p>
<p>The proposal for construction impacts on minerals and waste assets to be scoped into the Environment Statement and operational impacts on the same to be scoped out, is supported.</p>	<p>Noted.</p>
<p>The list of generic requirements for a Minerals Resource Assessment compliant with Minerals Local Plan Policy S8 (see Appendix 2) includes an assessment of local operator interest for material to be prior extracted from a non-mineral development site for sale to support other development projects in the vicinity. This could be considered to be an '<i>enhancement measure</i>' akin to what is already set out in this paragraph.</p>	<p>The findings in Appendix 11.1: Mineral Resource Assessment [TR010060/APP/6.3] are considered in terms of the identification of any appropriate / viable environmental enhancement measures.</p>
<p>The conclusions set out through Table 11.9 are supported.</p>	<p>Noted.</p>
<p>The assessment methodology is noted and the recognised need for a Responsible Sourcing Plan and Site Waste Management Plan is welcomed. The Minerals and Waste Authority have a schedule of information requirements to include when carrying out impact assessments on its mineral resources and active, permitted and/or allocated minerals and waste infrastructure, in accordance with safeguarding policies S8 of the Minerals Local Plan 2014 and Policy 2 of the Essex and Southend-on-Sea Waste Local Plan 2017. These are included in Appendix 2, 3 and 4. As mentioned elsewhere, it is considered appropriate that assessments of mineral take and waste arising are presented annually and linked to the various phases of development which are set out in Section 2.5 of the Scoping Opinion.</p>	<p>Appendix 11.1: Mineral Resource Assessment, Appendix 11.2: Mineral Infrastructure Assessment and Appendix 11.3: Waste Infrastructure Assessment [TR010060/APP/6.3] have been submitted as part of the DCO application. The need for these assessments was confirmed with the ECC Mineral and Waste Planning Authority in a meeting held on 5 February 2021.</p> <p>The estimated materials usage and waste generation, associated with constructing the proposed scheme, has been divided equally across the four-year construction programme to obtain a 'per annum' figure which has been directly compared to the baseline. This approach was confirmed with the ECC Mineral and Waste Planning Authority in a meeting held on 5 February 2021.</p>

Essex County Council comment	National Highways response
<p>As described at various points throughout the scoping consultation, the proposed scheme alignment is currently routed to go through the active quarry of Colemans Farm. The Council would wish to see more details on the interrelationship between the extant Colemans Farm (CF) development and the proposed scheme and how its relationship is proposed to be taken forward for forward planning purposes either to be accommodated within the DCO process or as separate planning applications secured via the site operator. There are many matters relating to the proposed road route through the quarry land such as:</p> <ul style="list-style-type: none"> <li>• the implications and responsibilities for relocation of existing quarry infrastructure</li> <li>• use of that infrastructure by the road programme</li> <li>• use of the land for the envisaged road programmes main site compound</li> <li>• quarry access provision</li> <li>• implications for the quarry reserves of mineral</li> <li>• additional resource need for the road programme and how borrow pits could be used and processed through the CF infrastructure.</li> </ul> <p>Furthermore, there are other questions such as timetabling of the proposed scheme and implications on the CF operational and time period commitments, the CF future aspirations to undertake advance extraction/infilling along the proposed road line, and need for additional infrastructure in the CF area for processing minerals. There may also be implications for any transport requirements of hauling mineral into the CF complex and its environmental impacts including delays to site restoration.</p> <p>The Council also wishes to highlight that CF restoration commitments are currently being secured through both the planning and legal obligations to achieving Priority Habitat. How the road programme is accommodating that commitment or providing compensatory habitat elsewhere and what the vehicle and commitment are to securing those long term aftercare management and maintenance measures should be clarified.</p>	<p>Relocation of the existing quarry infrastructure is a compensation issue and is ultimately the responsibility of the business owner (BAL). Provision of replacement infrastructure is not part of the proposed A12 scheme and is subject to Planning Consent to be obtained by BAL. National Highways is engaging with BAL and discussions on compensation are underway. This will provide BAL with the opportunity to progress planning and implementation of alternative quarry infrastructure whilst the proposed scheme progresses through the Statutory Planning Processes. This should help to mitigate impacts on business continuity and or significant delay to NH whilst BAL vacate the land subject to the DCO.</p> <p>As part of the DCO application, the proposed scheme has not considered use of existing infrastructure that may remain within the scheme limits. All materials, plant and temporary facilities to construct the scheme have been included in the assessment within the relevant chapters of the ES [TR010060/APP/6.1]. However, should any existing infrastructure (such as haul roads) sit within the Order Limits the proposed scheme would aim to use these rather than reconstruct new temporary haul roads adjacent to existing ones.</p> <p>Two main compounds are being considered for the proposed scheme and neither of these are within the quarry location. Laydown areas are included within the Colemans Quarry to support construction activities such as the bridge construction. The locations of the main and satellite compounds, as well as laydown areas, are shown on the Construction Phase Plans [TR010060/APP/2.15].</p> <p>Appendix 11.1: Mineral Resource Assessment and Appendix 11.2: Mineral Infrastructure Assessment [TR010060/APP/6.3] have been submitted as part of the DCO application and considered the implications for the safeguarded mineral resources and infrastructure at Colemans Farm Quarry.</p> <p>Borrow pits are included in the scheme design, and are independent of resources available from the quarry (typically the scheme will need more material for embankment construction than the higher grade materials won from the quarry).</p> <p>Where higher grade materials are required, the scheme has assessed these as being imported from offsite via the aggregates supply chains. The contractor may use local suppliers (including from the Colemans quarry) if price and material quality criteria are met and transport routes are within those assessed in the Transport Assessment [TR010060/APP/7.2].</p> <p>The scheme has engaged with Colemans Farm to ensure that the maximum materials from under the alignment of the proposed scheme can be extracted ahead of works for the road commencing, to amend the timetable for extraction and restoration and to re-site processing equipment. Brice Aggregates have submitted revised planning application to facilitate this. This can already be seen in previously consented Planning Applications from Brice Aggregates that have seen the extraction re-sequenced. Brice Aggregates have submitted further revised planning applications to facilitate this. These cover both the existing quarry area and an adjacent extension area which would help to reduce the risk of mineral sterilisation as a result of the proposed scheme. Colemans Farm aspirations to undertake advance extraction and infilling are subject to assessment under separate planning applications submitted by Brice Aggregates.</p> <p>The proposed scheme recognises the value of Colemans Quarry as a flagship scheme within Essex County Councils Mineral Site Restoration for Biodiversity, Supplementary Planning Guidance (2016). The consented restoration scheme for Colemans Farm Quarry has been used as the baseline for the impact assessment and biodiversity net gain calculations, in order to ensure impacts to the priority habitats proposed, as part of the Colemans Farm Quarry restoration, are assessed.</p>

Essex County Council comment	National Highways response
	Mitigation proposals to offset loss of priority habitats are documented in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] and on Figure 2.1: Environmental Masterplan [TR010060/APP/6.2]. Mitigation would be secured through the Register of Environmental Actions and Commitments within the first iteration Environmental Management Plan (EMP) [TR010060/APP/6.5]. Proposals for management and monitoring of habitats are outline within the Landscape and Ecology Management Plan within the first iteration EMP and would be further developed at detailed design within the second iteration EMP. Details of consultation regarding Coleman's Farm are included within the relevant chapters of the Environmental Statement (ES) [TR010060/APP/6.1].
<p>Policy S4 of the Essex Minerals Local Plan requires that all development proposals shall ensure that mineral waste is minimised and that minerals on development/redevelopment sites are re-used and recycled. This is to ensure both a reduction in the need for primary minerals and the amount of construction, demolition, and excavation wastes going to landfill. It further requires the application of procurement policies which promote sustainable design and construction in the proposed scheme. To address these issues, the MWPA request that information is provided to address the following. This could be by way of inclusion in the previously mentioned Site Waste Management Plan as well as a Mineral Supply Audit.</p> <p><b>Mineral Issues</b></p> <ul style="list-style-type: none"> <li>Information on anticipate volumes of aggregates required (indicative total volume of aggregate and an indicative phasing if available).</li> <li>Identify if a supply market for aggregate has been identified to support the delivery of this site, including borrow pits and material raised through prior extraction</li> <li>The transport of minerals material to and from the site will need also to be taken into account in relation to construction/waste management traffic.</li> </ul> <p><b>Waste Issues</b></p> <ul style="list-style-type: none"> <li>How waste will be sustainably managed throughout the stages of site clearance, design, construction and operation.</li> <li>Strategic forecasts in relation to expected waste arisings for site preparation and construction.</li> <li>Management strategies for this waste, including volume arising across different waste streams and phasing, and final destination linked to existing capacity in plan/study area.</li> </ul>	Information has been provided to address the issues identified by ECC and has been reported in various documents, including but not limited to Chapter 11: Material Assets and Waste, of the Environmental Statement [TR010060/APP/6.1], Appendix 11. 1: Mineral Resource Assessment [TR010060/APP/6.3] and Site Waste Management Plan within the first iteration of the Environmental Management Plan [TR010060/APP/6.5]. Operational impacts have been scoped out of the Environmental Statement [TR010060/APP/6.1] as per IDs 4.6.3 and 4.6.4 in Table 1.1.
<b>Flood risk and drainage</b>	
Essex County Council is the Lead Local Flood Authority (LLFA) for all the Districts in which the proposed A12 route would run through. Therefore, the proposed inclusion of a chapter on Road Drainage and the Water Environment within the Environmental Statement is welcomed. Some areas of the proposed scheme fall in flood zone 3 with some areas also shown to be at risk of flooding from other forms including surface water and ground water flooding. Therefore, it is necessary that a site-specific detailed Flood Risk Assessment (FRA) is undertaken considering the risk of flooding from all sources and the measures taken to mitigate any potential impact. The reference to an FRA being prepared for this site, for example at paragraph 14.4.24 is welcomed.	Appendix 14.5: Flood risk assessment [TR010060/APP/6.3] supports Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1].
As the LLFA, we would expect a detailed Surface Water Drainage Strategy including SUDS, water quality, and a SUDS adoption and maintenance plan to be submitted alongside the application for this project. In providing advice as the LLFA, ECC would look to ensure sustainable drainage proposals comply with the required standards as set out in the following documents: <ul style="list-style-type: none"> <li>Non-statutory technical standards for sustainable drainage systems (Defra 2015);</li> <li>Essex County Council' s adopted Sustainable Drainage Systems Design Guide 2020;</li> <li>The CIRIA SuDS Manual (C753);</li> <li>BS8582 Code of practice for surface water management for development sites.</li> </ul>	Appendix 14.6: Surface Water Drainage Strategy [TR010060/APP/6.3] includes details of proposed SuDS.

Essex County Council comment	National Highways response
<p>Initial high-level discussions have taken place with the applicant to discuss the surface water drainage element of the site. Some concerns have been flagged up as part of these discussions including the use of the pollution risk assessment process suggested. This is primarily focused on the use of Highways England Water Risk Assessment Tool (HEWRAT) which is not considered to give suitable consideration to the potential long-term cumulative impact of development. While it is appreciated that the proposal can't account for development that we currently do not know about, it can use a methodology which focuses on mitigation of all pollution risk associated with the proposed scheme. We ask therefore, that a comparative assessment based on the CIRIA Simple Index Approach for water treatment is also investigated. We welcome opportunities for further discussions on the above and drainage scheme as a whole.</p>	<p>A cumulative assessment has been undertaken using HEWRAT and is reported in Appendix 14.1: Water quality assessment report [TR010060/APP/6.2]. The cumulative assessment considers outfalls within 100m for sediment impacts and within 1km for impacts related to soluble pollutants in relation to the proposed scheme. DMRB LA 113 aligns with the requirements of the Water Framework Directive, i.e. discharges from road runoff must be designed so that water quality within receiving surface waters (following mixing of the road discharge and receiving waters), does not exceed published Environmental Quality Standards (EQSs). HEWRAT also provides assessment related to the intermittent nature of road runoff which has been developed through research undertaken with the Environment Agency to develop a set of standards and this is incorporated into HEWRAT.</p>
<b>Historic environment and historic buildings</b>	
<p>The table fails to reflect the national and possible international significance for Palaeolithic archaeological remains within the proposed route and the presence of Pleistocene sediments of significant palaeoenvironmental potential. Historic England state: <i>'Because of their extreme scarcity and the global scope of research into human origins, the importance of sites with significant in situ Palaeolithic remains or any early human fossils cannot be overstated. Likewise for the Upper Palaeolithic. Any site of this period represented by more than stray finds should be considered nationally important'</i>.</p>	<p>Table 7.1 was not intended as a prescriptive definition of the value of asset types, it merely provided examples. The value of heritage assets has been individually assessed and included in Appendix 7.1: Cultural Heritage Gazetteer [TR010060/APP/6.3]. The assessment has been updated with further information from the palaeolithic assessment.</p>
<p>Additional mitigation should include Aerial Photographic rectification to better inform evaluation by trial trenching</p>	<p>Appendix 7.4: Aerial investigation and mapping report [TR010060/APP/6.3] was produced by ECC and informed the scope and locations of the trial trenching which is reported in Appendix 7.7: Trial trenching final report [TR010060/APP/6.3].</p>
<p>There is no mention of the geoarchaeological methodology</p>	<p>This is described in detail in Appendix 7.10: Archaeological Mitigation Strategy [TR010060/APP/6.3].</p>
<p>The geoarchaeological assessment will also need to be incorporated to inform the assessment of potential impacts on cultural heritage assets</p>	<p>The results of the archaeological evaluation have informed the assessment of potential impacts in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>The proposed scheme of this site is likely to have an impact upon a number of heritage assets and their settings. In line with the advice in the National Planning Policy Framework (NPPF), it is expected that the Environmental Statement would contain a thorough assessment of the likely effects that the proposed scheme might have upon the significance of these assets. With regard to the proposals, the principal considerations are the indirect effects to heritage assets due to change within their settings.</p> <p>The Scoping Opinion Report states that a study area of 300m for designated and non-designated heritage assets and a study area of 1km for designated heritage assets would be used to identify the potential effects of the proposed scheme, which is considered appropriate.</p> <p>The Environmental Statement should also consider any effects to non-designated heritage assets, including locally listed buildings, within the development site or its setting. Colchester Borough Council maintains a Local List which should be consulted as part of the assessment process, as there is the potential for a number of locally listed buildings to be affected. It should be noted that there is the potential for additional heritage assets which may be affected to be identified through the assessment process.</p> <p>When assessing the indirect impact on heritage assets, the Environmental Statement should follow the three steps described in the Historic England Guidance document The Setting of Heritage Assets (HE 2017). These are as follows:</p> <ol style="list-style-type: none"> <li>1. Identify which heritage assets and their settings are affected;</li> <li>2. Assess the degree to which these settings and views make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated;</li> <li>3. Assess the effects of the proposed scheme, whether beneficial or harmful, on the significance or on the ability to appreciate it.</li> </ol>	<p>A flexible approach has been adopted when identifying high value assets on which there may be impacts on their setting. This is guided by professional judgement and the extent of the proposed scheme's ZTV prepared as part of the Landscape and Visual Impact Assessment in Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1].</p> <p>The cultural heritage baseline assessed in Chapter 7: Cultural Heritage, of the Environmental Statement [TR010060/APP/6.1] has been updated and includes data from the Colchester HER, including locally listed buildings.</p> <p>The methodology described by Historic England in their guidance document The Setting of Heritage Assets: Historic Environment Good Practice Advice in Planning Note 3 (2017) informed assessments of the contribution of setting to the value of assets, and the impact of the proposed scheme upon it.</p>

Essex County Council comment	National Highways response
Reference is made to the baseline having considered conservation areas from Braintree and Colchester, with no mention of Chelmsford administrative area. If this has been undertaken, and concludes there are no relevant conservation areas, then this should be stated.	Conservation areas have been included in the baseline assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. Updated conservation area boundaries were obtained from the relevant local authorities in January 2021.
Future baseline refers to CNEB and should also refer to the new Beaulieu Park station, which has planning permission, and hence committed. Reference to additional phases of Beaulieu Park and Channels residential development are referred to. The Chelmsford Local Plan was adopted in May 2020, and hence the additional growth of around 3,000 homes at North East Chelmsford should also be referenced, as it could change the baseline.	The proposed improvements to J19 of the A12 resulting from the CNEB, the new Beaulieu Park station and Beaulieu have been taken into account with the assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
This section refers to the widening of the A12 with regards the offline sections of the route but does not reference the new junction locations as having a potential impact on heritage assets during their construction. This should be included/investigated.	The locations of proposed new junctions was taken into account during archaeological evaluations, and impacts from them on cultural heritage assets has been assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
<b>Landscape</b>	
Section 8.3.14 identifies that the A12 and some surrounding areas suffer from light pollution. It must be ensured that the impact on light pollution both during construction and when the proposed scheme is in full operational use are clearly investigated, assessed and where appropriate mitigated against.	The effects of new lighting have been incorporated within the assessment of landscape and visual effects reported within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] during construction and operation. It is not considered that assessment of effects on the night skies in their own right is required due to the surrounding landscape context. This is because the skies are affected by existing light pollution, with none of the night skies within the study falling within the darkest night-time light pollution category identified on England's Light Pollution and Dark Skies mapping (Campaign to Protect Rural England, 2019). There are also no international dark sky reserves with policy controls to protect darkness, as designated by the International Dark-Sky Association, or Areas of Outstanding Natural Beauty within the study area. An environmental lighting impact assessment would therefore not be proportionate to the context and nature of the proposed scheme.

Essex County Council comment	National Highways response
<p>Although the scoping report does not reference Green Infrastructure (GI), an EIA can help identify appropriate measures for avoiding or reducing significant adverse effects on the functionality of GI assets (trees, watercourses, PROW, hedges, open spaces etc). It can also assist in identifying measures for compensating/off -setting unavoidable significant adverse effects on GI assets to protect the overall integrity of the surrounding wider landscape GI network.</p> <p>It is recommended that a detailed landscaping and ecology/GI strategy should be prepared as part of the LVIA and where the assessment and the other supporting documents indicates potentially significant effects on landscape character (including existing trees), visual amenity, biodiversity net gain value and health and wellbeing of the community (i.e. access to open spaces, encouraging active travel and recreation and reduce air pollution etc.) that may require mitigation. We would recommend that this includes:</p> <ul style="list-style-type: none"> <li>• How the design of GI to mitigate the effects of the development will be incorporated into the existing network of GI (including public open space) which may be used by the local community for recreational purposes.</li> <li>• Clearly set out mitigation for any significant adverse effects on the existing GI network, woodlands, parks, nature designated sites, public rights of way and any other resources that are used as recreational facilities.</li> <li>• Hard and soft landscape proposals together with vegetation retention to improve the character and quality of the landscape and how this will be managed and maintained.</li> <li>• Opportunities for advanced planting in the early stages of construction should be sought, where practicable. The phased implementation of new GI of the development construction will allow for the GI to mature and it will provide further benefit of reducing/buffering the aesthetic impact from the construction work.</li> <li>• The provision of multi-functional GI that can provide biodiversity net gain and create a potential green/wildlife corridor/bridges to allow for species migration and prevent fragmentation. By incorporating new and existing tree and vegetation planting, which will ensure that the visual impacts of the proposed scheme will be limited.</li> <li>• Existing and new paths (PROW, Cycle and bridle ways) to be incorporated into the GI network, providing attractive recreation areas that link with the rights of way network.</li> <li>• How retained trees and vegetation will be protected during construction through Construction Environmental Management Plan.</li> <li>• Where exposed engineered structures are required, these will be designed and constructed to support the principles of a landscape-led approach and mitigate the impact on the existing green infrastructure.</li> <li>• Will provide, within limits enhanced access, amenities and green infrastructure.</li> <li>• During construction where land is being used as ecological and visual screening and to reinstate the character of the landscape afterwards.</li> </ul>	<p>Design principles, which consider green infrastructure objectives, are presented in the Design Principles document [TR010060/APP/7.10]. Mitigation for green infrastructure assets has been identified within Chapter 8: Landscape and visual and Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1]. Figure 2.1 Environmental Masterplan [TR010060/APP/6.2] illustrates how green infrastructure would be addressed in terms of landscape and biodiversity mitigation, and public rights of way and access provision. The first iteration of the Environmental Management Plan [TR010060/APP/6.5] presents how natural assets would be protected during construction and how environmental mitigation would be secured within the Register of Environmental Actions and Commitments. The Landscape and Ecological Management [TR010060/APP/6.11] in the first iteration of the Environmental Management Plan [TR010060/APP/6.5] presents how the landscape and ecological mitigation would be reinstated and maintained.</p>
<p>The proposed 26 no. receptor viewpoints are deemed appropriate. The viewpoints cover the extent of the proposed scheme alignment (within the 1km buffer) including some of the most sensitive areas of change.</p>	<p>Noted with thanks.</p>
<p>All visualisations should be in accordance with the new Visualisation Representation Technical Guidance Note (09/ 19).</p>	<p>Photography and photomontages presented on Figures 8.4 and 8.5 [TR010060/APP/6.2] of Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] have been taken and produced in accordance with the Visual Representation of Development Proposals Technical Guidance Note 06/19 (Landscape Institute, 2019). The proposed methodology for the production of photomontages was included within landscape consultation with local planning authorities and Historic England in February 2021.</p>

Essex County Council comment	National Highways response
<p>Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment, 2013) should be used alongside DMRB LA10 rather than simply acknowledged as a part of the DMRB LA 10 document.</p>	<p>DMRB LA 107 Landscape and Visual Effects (Highways England, Revision 2, 2020) is considered the most appropriate methodology for the assessment of highway schemes, therefore the assessment of landscape and visual effects reported within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] is based on this guidance. DMRB LA 107 is influenced by GLVIA3, and guidance from GLVIA3 has also been applied to the assessment of landscape and visual effects reported within Chapter 8.</p>
<p>Seasonality should be a key consideration when reviewing and mitigating any enhancement measures along the route.</p>	<p>Seasonality has been considered as part of the landscape design process. Landscape and visual effects reported within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] have been assessed at winter year 1 (to illustrate worst case when mitigation planting is unestablished and when vegetation is not in leaf) and summer year 15 (to illustrate best case when mitigation planting would be established and vegetation would be in leaf).</p>
<p>It is clear that an expansive area will be impacted which has the potential to impact vegetation along the proposed route. Every effort should be made to retain any Category A and B trees which are highlighted within the survey, along with any high value veteran and ancient trees/woodlands.</p> <p>As stated within the Environmental assessment an Arboricultural survey will need to be undertaken in line with BS5837:2012 initially, along with an arboricultural impact assessment (AIA) and tree constraints plan (TCP).</p> <p>At this stage, there is no detailed designs and construction methodology with regards to the proposed scheme. Once designs and construction methodology has been confirmed, an arboricultural method statement will be necessary along with a tree protection plan (TPP). A tree removals plan should also be provided. All of which will need to be in line with BS5837:2012.</p> <p>It is also worth noting that it is too early to provide any arboricultural comments on whether the proposals are acceptable, these comments will be based off of the recommendations made as a result from the survey.</p>	<p>Appendix 8.4: Arboricultural Impact Assessment [TR010060/APP/6.1] is based on a Red/Amber/Green process showing trees to be removed/at risk of removal/retained. This assessment process results in the production of a preliminary tree removals plan. A detailed AMS should be produced at a later design stage to include detailed construction information.</p>
<b>Biodiversity</b>	
<p>Consideration must also be given to likely impacts on designated sites (international, national and local), Protected species and Priority habitats and species not just significant ones. This can be done within the Environmental Statement or as a separate document.</p> <p>Effective and robust measures, in line with the mitigation hierarchy, must be proposed which have a high degree of certainty for their deliverability in the long term. If there are residual impacts, these will need to be compensated or offset and appropriate enhancements included to ensure Biodiversity Net Gain from development.</p>	<p>Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] includes consideration of the receptors mentioned (international sites, priority habitats) and where impacts are considered unlikely, gives suitable justification for scoping them out.</p>
<p>Priority species/species of principal importance should also be explicitly listed in this paragraph.</p>	<p>Priority species are considered within Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] and any potential impacts have been assessed.</p>
<p>As raised elsewhere in the Scoping Report, Colemans Farm Quarry is a 'flagship' biodiversity site for the Essex Minerals Local Plan 2014 and supported by Supplementary Planning Guidance: Mineral Site Restoration for Biodiversity (June, 2016). A comparable site of at least similar size and context (e.g. proximity to natural habitats) will need to be sought in order to provide at least an equivalent level of compensation and enhancement to that already permitted.</p>	<p>Mitigation has been agreed with ECC and it was also agreed that it is only required to mitigate the area of the restored site which is lost due to construction of the proposed scheme. These discussions and mitigation are detailed in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p>

Essex County Council comment	National Highways response
<p>The proposed scheme should identify and pursue opportunities for securing measurable net gains for biodiversity, rather than aiming for no net loss. We recommend that a minimum of 10% Biodiversity Net Gain should be provided using Good Practice Principles for Development (<a href="https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf">https://cieem.net/wp-content/uploads/2019/02/Biodiversity-Net-Gain-Principles.pdf</a>). These principles have been developed by the Construction Industry Research and Information Association (CIRIA), the Chartered Institute for Ecology and Environmental Management (CIEEM) and the Institute of Environmental Management and Assessment (IEMA).</p> <p>We also encourage the proposed scheme to use the Defra Biodiversity Metric 2.0 (or later version if available) to help demonstrate that Biodiversity Net Gain is achieved. Notwithstanding the above, ecological functionality is important to underpin the assessments and the site's design should ultimately be based upon the Good Practice Principles using professional judgement by a suitably competent ecologist. The Metric should also not be a reason to miss opportunities to benefit key species through biodiversity net gain where they are not directly accounted for within the Metric.</p> <p>We would encourage habitat restoration and habitat creation to include priority habitats and to reflect existing local habitats. This should include open habitats (as well as wood land and hedgerows) such as Low land Meadows. This should include the road verges of the A12 where possible.</p> <p>Like for like habitat or better should be the aim and one habitat should not be replaced with another where possible.</p>	<p>The Defra 3.0 metric has been used to calculate net loss/gain and the worst-case scenario presented in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1]. Further detail is provided in Appendix 9.14: Biodiversity Net Gain Report [TR10060/APP/6.3]. Overall, the scheme is expected to achieve in excess of 10% net gain.</p>
<p>We do not agree that Hazel Dormouse should be scoped out from any further consideration.</p> <p>The report scopes out Hazel Dormouse based on the fact that no evidence was identified during a nest tube survey and that the nearest record was 2km. However, we query the methodology undertaken, as the report specifies that a presence/absence survey was undertaken following Bright et al. 2006 (Dormouse Conservation Handbook), but no specific details on how the survey was carried out has been provided. In particular, we have concerns about the following statement: <i>'The number of tubes will be appropriate for the habitats to be surveyed, with at least ten tubes in each sample area'</i>. 10 tubes are unlikely to be sufficient sample size to identify presence/absence per habitat block (50 tubes per habitat section would be preferable).</p> <p>Furthermore, we have not found any details on the habitat assessment (Species diversity, structure, landscape connectivity etc.) to accompany the presence/likely absence survey. This would be necessary to allow us to have certainty that surveys have been carried out in appropriate locations to further justify likely absence.</p>	<p>Appendix 9.6: Dormouse survey report [TR010060/APP/6.3] details sufficient survey effort throughout the survey area to conclude dormice are absent.</p>
<p>We would not support applying the proposed deviation from the Bat Conservation Trust guidelines unless there is certainty of likely impacts on the bat populations at the local level, which would be necessary to support a European Protected Species Mitigation Licence needed for a project. There is a need for sufficient survey &amp; assessment on bats &amp; trees affected by a road scheme. It needs to be evidence led and it may therefore not be appropriate for this proposed scheme.</p>	<p>The applicant is confident that the data obtained will be sufficient to support a draft EPSM licence for bats (and propose to update that data in order to obtain an EPSM post DCO consent), and that the data is sufficient to identify significant impacts on bats to inform the assessment in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p> <p>Further discussions on the survey methodology have been undertaken with Place Services (ECC) prior to the submission of the Environmental Statement who have broadly agreed the proposed methodology. Evidence of the consultation and agreement has been provided within Chapter 9.</p>

Table 1.9 Feering Parish Council comments and responses

Feering Parish comment	National Highways response
<p>Item 2.1 / Page 8 - The following is not referenced in the Scoping report, but was in the Highways England preferred route brochure in relation to a potential connection with a new A120 – Feering Parish Council seeks clarification that this remains the case and will it be considered moving forward.</p> <p><i>We are considering whether we can remove junction 23, but with new access roads provided from Kelvedon to junction 22. The Government's Road Investment Strategy 2 (RIS2) stated that the A12 scheme will need to take into account the evolving proposals for the A120 Braintree to A12 improvements. We therefore may need to include scope for a potential future road link joining to the proposed improvements to the A120 road.</i></p>	<p>In 2020 the government announced the inclusion of the A120 Scheme within the RIS3 pipeline (a group of schemes being considered for potential inclusion in the RIS3 programme for delivery in 2025-2030). Work is progressing to validate all the previous work that has been done by ECC which would include a link to the A12. The two project teams are working together to reduce customer impact where practicable should the A120 be included within a future RIS period. Further information can be found in the Interrelationships Document [TR010060/APP/7.6].</p>
<p>Feering &amp; Kelvedon Conservation Areas – it appears from the maps included that the conservation areas have not been updated to reflect the latest conservation area changes approved by Braintree District Council.</p>	<p>The latest adopted conservation area boundaries have been sought and included within the relevant topic chapters of the Environmental Statement [TR010060/APP/6.1].</p>
<p>Feering - As noted on the plans, there are specific sites that form part of the proposed strategic growth location (Braintree District Council - Policy LPP 22 Strategic Growth Location - Land at Feering). The master planning/design of these sites are unconfirmed however the LPP22 states the following and would seek assurance that the EIA scoping surveys include for these areas:</p> <p><i>Public open space, and informal and formal recreation and Green Infrastructure on land to the east of the current A12 route and/or to the south east of the cricket ground, north of the railway line.</i></p>	<p>Potential impacts on Land at Feering are addressed in Appendix 13.3: Land use and accessibility assessment tables [TR010060/APP/6.3].</p>
<p>Item 15.3.14 / Page 234 - Currently the CO<sub>2</sub> emissions have been estimated for the purpose of the scoping report, but we would like clarification that all GHG's, not just CO<sub>2</sub>, will be included in the Environmental Statement.</p>	<p>Where it is practical and proportionate to do so (e.g. where industry recognised emission factors are available), Chapter 15: Climate, of the Environmental Statement [TR010060/APP/6.1] has considered emissions of the seven greenhouse gases that contribute to climate change (i.e. carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF<sub>3</sub>) and sulphur hexafluoride (SF<sub>6</sub>)). As required by DMRB LA 114, these emissions have been expressed throughout Chapter 15 as emissions of carbon dioxide equivalent (CO<sub>2</sub>e).</p>
<p>Light &amp; noise pollution – As mentioned, Feering borders the A12 and we are concerned with any increase in light and/or noise pollution as a consequence of these proposals and would seek assurances that the scoping survey and subsequent proposals will include for landscape screening and acoustic measures to mitigate both noise and light pollution.</p>	<p>The re-alignment of the A12 in this area should provide benefits in terms of noise reduction for the residents of Feering. This is discussed further in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1]. The effects of new lighting have been incorporated within the assessment of landscape and visual effects reported within Chapter 8: Landscape and visual [TR010060/APP/6.1] during construction and operation. Two representative viewpoints (30 and 31) were added to consider visual effects from Feering. Landscape mitigation presented on Figure 2.1 Environmental Masterplan [TR010060/APP/6.2] seeks to reduce any lighting effects.</p>
<p>Noise monitoring points (Page 352) – we note that there appears to be no locations indicated along the stretch of the A12 that borders Feering and we request additional monitoring is included as part of the EIA process.</p>	<p>The noise surveys undertaken in May 2021 included a location that borders Feering. This is noise survey location LT9, shown on Figure 12.1 [TR010060/APP/6.2].</p>

**Table 1.10 Historic England comments and responses**

Historic England comment	National Highways response
We confirm that historic environment represents a potentially significant issue in EIA terms, and confirm that the historic environment should be 'scoped in' to the assessment.	Noted and agreed.
We note the Chapter 7 relating to Cultural Heritage that has been submitted in the Scoping Report. We agree that the scoping report has taken into consideration both designated and non-designated heritage assets and that the assessment methodologies are generally appropriate – and we offer the following specific comments below.	Noted and agreed.
We have previously advised that a widened road is likely to have a lesser impact to the landscape setting of the area than the introduction of new lengths of road. We welcome the review of Option 2 and the design refinements relating to the offline section between junction 22 and junction 23, following our concerns about the potential high degree of harm that would be caused to the Rivenhall Long Mortuary Enclosure scheduled monument (NHLE no. 1008980), as well as associated archaeological remains that contribute to the wider historic setting of the monument (3.2.18).	Noted and agreed.
Our concerns remain, however, about the proposed route between junction 24 (Feering) and junction 25 (Marks Tey), expressed in our response of 27 March 2017. We have particular concerns regarding the impact of the proposed offline bypass to the significance of the Grade II listed buildings at Easthorpe Green Farm (Easthorpe Green Farmhouse and Flispies). It is likely that the proposed route would have an impact on the significance of these buildings, in terms of the changes to their settings and their relationships to the wider landscape. This will require detailed assessment and careful consideration in the Environmental Statement, along with proposals for appropriate mitigation to offset any harm. Overall, a widened road is likely to have a lesser impact to the landscape setting of the area than the introduction of a new offline section of road.	The impacts of the offline sections of the proposed scheme on the value (significance) of built heritage assets has been assessed in detail both in terms of contribution setting makes to the assets' value and changes to that setting as well as appropriate and proportionate mitigation proposals to offset any harm. This is included in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
Similar concerns are raised with regard to other designated assets north of Easthorpe Green including a Grade II* listed barn at Marks Tey Hall (itself a Grade II listed building). There are also a number of undesignated historic landscapes features in this section of the proposed route, including two historic greens (Easthorpe Green and Potts Green), which form the landscape setting of the listed buildings. These will also require close assessment in the Environmental Statement.	These designated assets and their settings have been fully assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
In addition, the road in this section meets the junction of two Roman roads; the southwest to north-east A12 itself and a broadly east-west route. This second Roman road survives as a modern road east of the A12 as Easthorpe Road. The meeting point of two Roman roads should be expected to have a high degree of archaeological potential.	The archaeological potential of this area has been investigated during the archaeological evaluation and impacts assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
In terms of below-ground heritage assets (Section 7.7), we welcome the investigations that are proposed to assess cultural heritage. The Environmental Statement should provide a detailed archaeological baseline; only a detailed and comprehensive understanding of the archaeological resource will allow for impact to heritage to be properly mitigated. During the options appraisal, we advised that there is significant potential for further nationally important sites to be discovered along this section, which has not yet been the subject of detailed assessment.	The results of the archaeological evaluation have informed the archaeological baseline and the assessment of effects in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. It has also informed the development of Appendix 7.10: Archaeological mitigation strategy [TR010060/APP/6.3].
We note that a preliminary assessment of the value of cultural heritage assets within the study area has been undertaken (7.3.14 and Figure 7.1). At this stage, no systematic archaeological investigation has been undertaken and, therefore, we believe it is difficult to accurately establish the value of the majority of below-ground archaeological remains along the proposed route. This will need to be reviewed for the Environmental Statement based on the results of the survey work (geophysical survey, trial-trenching and Palaeolithic assessment).	The preliminary assessment of value of below ground archaeological assets has been reviewed on completion of the archaeological evaluation and included in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].
We note that the proposed scheme has high potential for encountering Palaeolithic remains (7.3.7), and that a Palaeolithic desk-based assessment that has been prepared. Again, the nature and scope of specialist Palaeolithic survey and assessment should be devised through consultation with the archaeological advisors at Essex Place Services and Colchester Borough Council.	The nature and scope of assessment conducted to establish the Palaeolithic archaeological potential of the proposed scheme was developed in collaboration with Historic England, Essex Place Services and Colchester Borough Council and carried out in line with a Written Scheme of Investigation (approved by the above prior to the fieldwork commencing).

Historic England comment	National Highways response
<p>It should be noted that the existing records could also be used to develop an initial deposit model for the proposed scheme that could be enhanced following later geoarchaeological sampling. It is stated that there is the potential for Pleistocene and Holocene deposits of archaeological significance to be present along the route, which in turn suggests that there is the potential for archaeological remains to be buried within the natural deposit sequence as well. This information may not be adequately represented in the Historic Environment Record, by shallow geophysics and field walking or even by shallow evaluation trenches. An effective method for identifying the potential depth and character of this archaeology would be to undertake a preliminary deposit model as part of the desk-based assessment. This should be prepared by a geoarchaeologist based on any available stratigraphic information, including archaeological and geotechnical data, to follow the route footprint. The deposit model will help to illustrate the depth, characteristics and potential of the deposits of archaeological interest and should inform any subsequent evaluation trenching, borehole sampling and/or geophysical survey. The deposit model will also help to guide elements of the proposed mitigation strategy, such as the choice of geophysical techniques that are utilised. For example, magnetometry has been applied so far, but techniques that investigate deeper deposits of archaeological interest should be considered as well, such as electromagnetic induction (EMI) or electrical resistivity (ERT).</p>	<p>This has been discussed with Historic England, Essex Place Services and Colchester Borough Council in meetings/calls during the drafting of the archaeological evaluation Written Scheme of Investigation (WSI) which will be finalised during detailed design. The WSI will entail the agreed approach to geoarchaeological sampling and assessment.</p>
<p>It is noted that several chapters within the scoping report contain information that may also aid the assessment of the archaeological potential of the development area. For example, information about the superficial geology (Section 10.3.6) and the groundwater levels (Chapter 14). In particular, it is important to understand how changes to the groundwater levels, water quality or the movement of water through deposits (Section 14.4.8) may impact the historic environment. Additional works are planned to investigate the geology (Section 10.3.8) and hydrology/hydrogeology (Section 14.3.2 and 14.5.18) of the development area; we would therefore recommend that the value of this information to inform the assessment of the historic environment should be considered and discussed with the project archaeological team. This will allow any opportunities to be maximised where possible, and it will also hopefully reduce any duplication of effort. For example, any additional boreholes that are collected for ground investigation works, and the hydrological conceptual model (Section 14.5.4) will potentially add to the understanding of the historic environment, as well as the likely preservation conditions that may be present on the site.</p>	<p>This has been addressed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] where there is potential for these specific physical impacts. Chapter 7 cross references to Chapter 10: Geology and soils and Chapter 14: Road drainage and the water environment, of the Environmental Statement [TR010060/APP/6.1], where appropriate.</p>
<p>We welcome the current and proposed programme of archaeological evaluation, comprising geophysical survey followed by a programme of archaeological trial trenching. This should be undertaken across the DCO application area to ensure the nature, extent and survival of subsurface archaeological and geoarchaeological remains are established, and presented in the Environmental Statement. This will enable an appropriate scheme of mitigation to be prepared. We note that a geophysical survey has been carried out (or is currently being conducted) along the proposed route (7.5.2 and 7.7.3), and we look forward to reviewing the report on this work.</p>	<p>A programme of archaeological investigation comprising geophysical surveys, archaeological trial trenching, and specialist investigations to establish the Palaeolithic and palaeoenvironmental potential of the proposed scheme has been conducted to inform Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1]. The results are presented in Appendices 7.5 to 7.8 [TR010060/APP/6.3].</p>
<p>The nature and scope of the archaeological evaluation should be devised through consultation with the archaeological advisors at Essex Place Services and Colchester Borough Council and we would be also pleased to provide advice. In our view, this will provide the Examining Authority with the appropriate level of information to determine the application, confident that the historic environment has been adequately assessed and that the proposed mitigation measures will be effective and proportionate to the significance of heritage assets. Considering the amount of evaluation fieldwork that is likely to be required, we think it is important that discussions about this fieldwork commence at the earliest opportunity. We also advise that a timetable is agreed for each stage of the assessment process.</p>	<p>The nature and scope of archaeological evaluation was developed in collaboration with Historic England, Essex Place Services and Colchester Borough Council and carried out in line with a WSI approved by the above prior to the fieldwork commencing.</p>

Historic England comment	National Highways response
<p>Some of the work associated with the proposed scheme may impact on the groundwater levels or movement of water through deposits, as well as the water quality (Section 7.4.2 and Chapter 14). For example, the excavation of borrow pits, the need for piling/foundations, compression of deposits through the construction of elements or the movement of vehicles, the reduction in recharge values, or the need to dewater areas during construction (Section 14.4.8). The impact that this work may have on the historic environment needs to be considered as any changes may affect preservation conditions within the area of the proposed scheme or in nearby deposits, which in turn may result in the damage and/or loss of archaeological remains. We would recommend that the Historic England document 'Preserving Archaeological Remains' (2016) is referred to aid the discussions of the potential impacts to the historic environment as well as the approaches used to investigate them: <a href="https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/">https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/</a>. The Historic England document 'Piling and Archaeology' (2019) should be also referred to as some of the elements of the development will involve piling: <a href="https://historicengland.org.uk/images-books/publications/piling-and-archaeology/">https://historicengland.org.uk/images-books/publications/piling-and-archaeology/</a></p>	<p>This has been addressed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] and Historic England documents have been referred to. Chapter 10 cross references to Chapter 14: Road drainage and the water environment chapter, of the Environmental Statement [TR010060/APP/6.1], where appropriate.</p>
<p>It is stated in Section 5.4.3 that an outline Environmental Management Plan (EMP) and a detailed Construction Environmental Management Plan (CEMP) will be produced. We look forward to reviewing these documents, and the detailed mitigation strategies developed for the historic environment.</p>	<p>The first iteration Environmental Management Plan [TR0100/APP/6.5] is provided within the DCO application. This included detailed mitigation strategies developed for the historic environment.</p>
<p>We note the baseline landscape data produced (Chapter 8) and recommend the LVIA is supplemented with heritage specific viewpoints (photographs, photomontages and wirelines) that illustrate the Environmental Statement and support the results of the heritage assessment. If these are to be presented in the landscape and visual chapter, the assessment needs to be clearly set out and cross-referenced with the heritage chapter.</p>	<p>Within the Environmental Statement, effects on heritage assets are considered within Chapter 7: Cultural heritage [TR010060/APP/6.1]. A proportionate number of representative viewpoints and photomontage locations, agreed through consultation with local planning authorities and Historic England, have been assessed within Chapter 8: Landscape and visual [TR010060/APP/6.1]. The representative viewpoints focus on likely significant effects and include consideration of views from heritage assets, both public and privately owned. Where appropriate Chapter 7 and Chapter 8 cross reference each other.</p>
<p>We note the representative viewpoints proposed in Figure 8.3. In terms of the assessment of setting on designated heritage assets, we look forward to constructive engagement with the applicant, at an early stage, to agree the proposed key viewpoints for visualisations. The ZTV should be re-produced in relation to the designated heritage assets, and any significant historic elements, and used to inform the selection of potential viewpoints to assess the impact of the proposed scheme on the setting of heritage assets.</p>	<p>Representative and illustrative viewpoints assessed within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1] have been agreed through consultation with local planning authorities and Historic England.</p>
<p>The setting of heritage assets is not just restricted to visual impacts and other factors should be considered, in particular noise, vibration, light, odour, traffic assessments, during construction and operation (7.4.12). Where relevant, the cultural heritage chapter should also be cross-referenced to other relevant chapters, and we advise that all supporting technical heritage information is included as appendices.</p> <p>We note section 7.2.3 states, '<i>designated heritage assets data within a study area extending up to 1km from the provisional Order Limits in all directions have been collated...It is recognised that significant effects on the value of heritage assets rising from changes to setting are unlikely beyond 1km</i>'.</p>	<p>The assessment in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] includes consideration of noise, vibration and traffic and cross refer to other topic chapters where relevant.</p>
<p>The assessment should define a study area according to the sensitivity of the receiving environment and the potential impacts of the project (DMRB, Sustainability &amp; Environment Appraisal, LA 106 Cultural heritage assessment, 3.5). The assertion that there will be no significant effects on the value of heritage assets beyond 1km needs to be evidence-based, and it should not be scoped out at this stage.</p>	<p>Noted and agreed. See response to ID 4.2.2 in Table 1.1.</p>
<p>We would advise that the area of study for designated heritage assets is extended to 2km because the preliminary ZTV (Figure 8.3) shows that the zone of theoretical visibility would be considerable larger. Therefore, the road – particularly in terms of long views – has the potential to impact on designated heritage assets across a wider area. This larger study area will be consistent with 2km study area shown in Figures 8.1 and 8.3 of the scoping report.</p>	<p>Noted and agreed. See response to ID 4.2.2 and 4.3.4 in Table 1.1.</p>

Historic England comment	National Highways response
<p>In terms of the assessment of setting, we consider the analysis of setting (and the impact upon it) as a matter of qualitative and expert judgement which cannot be achieved solely by use of systematic matrices or scoring systems. Historic England, therefore, recommends these should be in an appendix and seen only as material to support a clearly expressed and non-technical narrative argument within the cultural heritage chapter. The EIA process should use the ideas of benefit, harm and loss to set out 'what matters and why' why' in terms of the heritage assets' significance and setting, together with the effects of the development upon them.</p>	<p>Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1] contains clearly expressed non-technical narrative arguments, supported by the detailed asset descriptions in Appendix 7.1: Cultural Heritage Gazetteer [TR010060/APP/6.3].</p>
<p>In addition, the appreciation of the value of the historic environment should not rely solely on an appreciation of the location of designated heritage assets but consider the interactions with the wider landscape.</p>	<p>Interactions with the wider landscape have been assessed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>We note that the effects on historic landscape types (HLT) during the operational phase have been scoped out of the assessment (Section 17.2.3 and Table 17.1). It is stated in the Report, 'historic landscapes would only be sensitive to the potential for increases in the way in which sound and noise currently contribute to their heritage value. Using the criteria for the assessment of impacts set out in Appendix C, this would not be on a scale that would result in significant effects'.</p> <p>We would advise that the proposed scheme could potentially have a harmful impact on the significance of historic landscapes, in terms of the impact of the views, lighting and noise on setting, and the way in which the historic landscape is experienced. This should, therefore, be included in the assessment (along with impact during construction), contra 7.4.10 and Table 7.2.</p>	<p>A precautionary approach has been taken by scoping operational phase impacts on the historic landscape into the assessment in Chapter 7: Cultural Heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>By following planning policy and guidance we would expect the project to be creative in how it might offer opportunities for the enhancement of heritage assets, and how the project might deliver public (heritage) benefit. The Environmental Statement should aim to make clear public heritage benefits and outreach as part of planned mitigation.</p>	<p>Public benefit and outreach has been incorporated in planned mitigation where appropriate and is discussed in Chapter 7: Cultural heritage, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>We would advise the Environmental Statement should put forward proposals for the use, display and interpretation of archaeological evidence that will be revealed by the development and to provide enhancement to heritage assets and secure wide heritage benefits as part of the proposed scheme and we would be pleased to provide advice about potential heritage schemes.</p>	<p>Proposals for enhancement through the use, display and interpretation of archaeological evidence are included in Chapter 7: Cultural Heritage, of the Environmental Statement [TR010060/APP/6.1].</p>

Table 1.11 Maldon District Council comments and responses

Maldon District Council comment	National Highways response
<b>Air quality</b>	
Paragraph 6.7.2: Any construction dust assessment should have regard to the IAQM guidance document: Assessment of dust from demolition and construction 2014.	Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1] follows DMRB LA 105 guidance on the assessment of construction dust. DMRB LA 105 is informative for the assessment of major road schemes. The level of construction dust mitigation required following the assessment with the DMRB LA 105 methodology is equivalent to the outcomes with the IAQM guidance.
Paragraph 6.7.3: Any air quality assessment should have regard to the IAQM guidance document: Guidance on land-use planning and development control: Planning for air quality 2017.	Chapter 6: Air quality, of the Environmental Statement [TR010060/APP/6.1] follows DMRB LA 105 guidance which assesses significant effects against relevant thresholds for air quality.
<b>Noise and vibration</b>	
Paragraph 12.3.12. Whilst DMRB may not provide a scale of values for sensitivity, that is no reason to not differentiate between the sensitivity of receptors. A hospital is inarguably more sensitive than a factory which in turn is different to a domestic dwelling. Maldon District Council expects for sensitivity to be differentiated with justification presented.	The sensitivity / value of a receptor has been considered as one of the factors when considering the significance of effect of a receptor.
In paragraph 12.4.3 there is what appears to be a typographical error in the sentence '1. Does construction noise generated by the project have the potential to adversely affect any noise?' Clarification/correction is required.	The correct text should be "1. Does construction noise generated by the project have the potential to adversely affect any <u>noise sensitive receptors</u> ".

Table 1.12 Natural England comments and responses

Natural England comment	National Highways response
Case law <sup>1</sup> and guidance <sup>2</sup> has stressed the need for a full set of environmental information to be available for consideration prior to a decision being taken on whether or not to grant planning permission. Annex A to this letter provides Natural England's general advice on the scope of the EIA for this development.	Noted and agreed.
Marks Tey Brickpit SSSI is a geological site on the edge of the proposed scheme, it is important that indirect (e.g. pollutant linkages) as well as direct impacts are considered (such as geological features of interest outside of the SSSI boundary). Information on SSSI's and their special interest features can be found at <a href="http://www.magic.gov">www.magic.gov</a> . The Environmental Statement should include a full assessment of the direct and indirect effects of the development on the features of special interest within these sites and should identify such mitigation measures as may be required in order to avoid, minimise or reduce any adverse significant effects.	Marks Tey SSSI has been scoped out of Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] due to its designation being based on geological interest rather than that of biodiversity. This has been agreed with relevant stakeholders.
Of main concern regarding European sites is the potential for air pollution and water pollution to indirectly impact the Essex Estuaries (and Colne and Blackwater estuaries) from both the works and for the increased traffic use following widening. You may find this document on road traffic emissions useful: <a href="http://publications.naturalengland.org.uk/publication/4720542048845824">http://publications.naturalengland.org.uk/publication/4720542048845824</a>	Potential air pollution and water pollution impacts on European sites have been considered and assessed within Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] and the HRA No Significant Effects Report [TR010060/APP/6.8]. The conclusion of the assessments is that there would likely be no significant effect on any European site from air pollution or water pollution associated with the proposed scheme.
We also suggest that the traffic modelling ensure that other notable European sites in the area ( e.g. Epping Forest SAC) are checked to see if they may be affected, i.e. through identification of the 'Affected Road Network' ARN.	Potential air pollution and water pollution impacts on European sites have been considered and assessed within Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] and the HRA No Significant Effects Report [TR010060/APP/6.8]. The conclusion of the assessments is that there would likely be no significant effect on any European site from air pollution or water pollution associated with the proposed scheme.
We would encourage ambitions towards environmental net gain. Development provides opportunities to secure net gains for biodiversity and wider environmental gains, as outlined in the NPPF (paragraphs 8, 72, 102, 118, 170, 171, 174 and 175). We advise you to follow the mitigation hierarchy as set out in paragraph 175 of the NPPF and firstly consider what existing environmental features on and around the site can be retained or enhanced or what new features could be incorporated into the development proposal. Where onsite measures are not possible, you should consider off site measures.	The mitigation hierarchy has been applied to the assessment in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1]. The chapter details mitigation and enhancement measures being proposed. The biodiversity value of the proposed scheme has been assessed in accordance with the Defra 3 biodiversity metric. Further details can be found within Appendix 9.14: Biodiversity Net Gain report [TR010060/APP.6.3]. Overall, the scheme is expected to achieve in excess of 10% net gain.
<p>You could also consider how the proposed scheme can contribute to the wider environment and help implement elements of any Landscape, Green Infrastructure or Biodiversity Strategy in place in your area. For example:</p> <ul style="list-style-type: none"> <li>• Links to existing greenspace and/or opportunities to enhance and improve access.</li> <li>• Identifying opportunities for new greenspace and managing existing (and new) public spaces to be more wildlife friendly (e.g. by sowing wild flower strips)</li> <li>• Planting additional street trees.</li> <li>• Identifying any improvements to the existing public right of way network or using the opportunity of new development to extend the network to create missing links.</li> <li>• Restoring neglected environmental features (e.g. coppicing a prominent hedge that is in poor condition or clearing away an eyesore).</li> </ul> <p>A recent meeting with the development team appeared to suggest that the project had a negative biodiversity net gain 'target'. NSIP schemes such as this present strategic important opportunities to positively contribute to the biodiversity of the area, which are likely to be felt for generations to come. Natural England expects this project to deliver net gain ambitions commensurate with the scale and nature of the project, and will be happy to work with you to maximise the opportunities arising.</p>	Details of mitigation and enhancement measures are provided in Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1]. The proposed scheme strives to maximise biodiversity opportunities, including the enhancement of existing habitats to improve quality and connectivity across the landscape.

Table 1.13 Public Health England comments and responses

Public Health England comment	National Highways response
<p>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. 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. The section should summarise key information, risk assessments, proposed mitigation measures, conclusions and residual impacts, relating to human health. Compliance with the requirements of National Policy Statements and relevant guidance and standards should also be highlighted.</p>	Noted.
<p>In terms of the level of detail to be included in an Environmental Statement, we recognise that the differing nature of projects is such that their impacts will vary. The attached appendix summarises PHE's requirements and recommendations regarding the content of and methodology used in preparing the Environmental Statement.</p> <p>Please note that where impacts relating to health and/or further assessments are scoped out, promoters should fully explain and justify this within the submitted documentation.</p>	<p>The recommendations have been reviewed. A meeting was held with PHE 29 January 2021 to further discuss the scope and we have elaborated on the scope of the health assessment in the methodology section in Chapter 13 [TR010060/APP/6.1] and with some further detail on how these recommendations have been addressed in Appendix 13.2: Stakeholder engagement and Scoping [TR010060/APP/6.3].</p>
<p>Our position is that pollutants associated with road traffic, particularly particulate matter and oxides of nitrogen are non-threshold; i.e. an exposed population is likely to be subject to potential harm at any level and that reducing public exposures of non-threshold pollutants (such as particulate matter and nitrogen dioxide) below air quality standards will have potential public health benefits. We support approaches which minimise or mitigate public exposure to non-threshold air pollutants, address inequalities (in exposure), maximise co-benefits (such as physical exercise). We encourage their consideration during development design, environmental and health impact assessment, and development consent.</p>	<p>The proposed scheme incorporates improvements to the walking and cycling infrastructure to help support active travel. Some of these proposed improvements involve increased distance between the walking/cycling routes and the trunk road traffic conditions, which should help reduce some exposure to air pollution</p>
<p>As the application is for a highway development, we have included guidance on the effects of noise on public health and wellbeing in Appendix B.</p> <p>Our guidance pertaining to noise is informed by the recommendations in the 2018 Environmental Noise Guidelines for the European Union published by the World Health Organization (WHO) and high-quality systematic reviews of the scientific evidence.</p>	<p>The guideline noise levels are considered to be extremely ambitious to achieve for receptors alongside an existing major trunk road in England. The cost of achieving these is likely to make the proposed scheme unviable. However, the health assessment has referred to the evidence that underpins the WHO 2018 Environmental Noise Guidelines in Appendix 13.1: Health literature review and evidence [TR010060/APP/6.3].</p>
<p>This section of PHE's scoping response, identifies the wider determinants of health and wellbeing we expect the Environmental Statement to address, to demonstrate whether they are likely to give rise to significant effects. PHE has focused its approach on scoping determinants of health and wellbeing under four themes, which have been derived from an analysis of the wider determinants of health mentioned in the National Policy Statements. The four themes are:</p> <ul style="list-style-type: none"> <li>• Access</li> <li>• Traffic and Transport</li> <li>• Socioeconomic</li> <li>• Land Use</li> </ul>	<p>These determinants of health are included in the scope. Appendix 13.2: Stakeholder engagement and Scoping [TR010060/APP/6.3] sets out how the wider determinants identified by PHE have been considered, as well as the requirements of the DMRB LA 112 standard.</p>
<p>The proposed 4-year construction timeline results in the need for very clear reporting on the temporal impacts and effects on the local population. In this context 'temporary' impacts can extend over long periods, but the scoping report does not comment on how the temporal scope will be defined.</p>	<p>The timescales for the assessment are set out in the methodology section of Chapter 13 Population and human health, of the Environmental Statement [TR010060/APP/6.1]. It states that transient effects are those that would typically last up to two days, such as disruption caused in the case of a weekend road closure. Short-term effects are those lasting up to six months. Medium-term effects are those lasting six months to five years. Long-term effects are those lasting more than five years. Temporary impacts are impacts that would not result in a permanent change.</p>

Public Health England comment	National Highways response
<p>The reporting within the PEIR should ensure a consistent, transparent and accurate approach to the reporting of temporary effects.</p>	<p>The timescales for the assessment are set out in the methodology section of Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1]. It states that transient effects are those that would typically last up to two days, such as disruption caused in the case of a weekend road closure. Short-term effects are those lasting up to six months. Medium-term effects are those lasting six months to five years. Long-term effects are those lasting more than five years. Temporary impacts are impacts that would not result in a permanent change.</p>
<p>The scoping report does not identify any aspects to be scoped out of the assessment for population and human health. The list of wider determinants to be scoped into the Environmental Statement, by the applicant, are very broad descriptions and each will contain an important range of potential impacts on health and wellbeing. Should the applicant wish to scope out any of these determinants the PEIR must provide adequate justification in accordance with the Planning Inspectorate Advice Note 7 (Environmental Impact Assessment: Process, Preliminary Environmental Information and Environmental Statements).</p>	<p>The scope of wider determinants assessed in the Environmental Statement is set out in the methodology section of Chapter 13: Population and human health [TR010060/APP/6.1]. Appendix 13.2 of the Environmental Statement [TR010060/APP/6.3] provides some further information on how the scope of the wider determinants identified by Public Health England relates to those required in DMRB LA 112.</p>
<p>The scoping report accepts the broad definition of health proposed by the WHO and we welcome the specific reference to mental health. Mental well-being is fundamental to achieving a healthy, resilient and thriving population. It underpins healthy lifestyles, physical health, educational attainment, employment and productivity, relationships, community safety and cohesion and quality of life. A scheme of this scale and nature has impacts on the over-arching protective factors, which are:</p> <ul style="list-style-type: none"> <li>• Enhancing control</li> <li>• Increasing resilience and community assets</li> <li>• Facilitating participation and promoting inclusion.</li> </ul>	<p>These protective factors have been used to inform the Mental well-being impact assessment (MWIA) which is reported in Appendix 13.4 [TR010060/APP/6.3].</p>
<p>There should be parity between mental and physical health, and any assessment of health impact should include the appreciation of both. A systematic approach to the assessment of the effects on mental health, including suicide, is required. The PEIR should reference the methodology used to complete assessments for the effects on mental health and wellbeing. The Mental Well-being Impact Assessment (MWIA), could be used as a methodology. The assessment should identify vulnerable populations and provide clear mitigation strategies that are adequately linked to any local services or assets</p>	<p>We have applied the MWIA methodology to inform the understanding of impacts on wellbeing. The MWIA is reported in Appendix 13.4 [TR010060/APP/6.3]. The approach has been adapted to try to align with the preapplication consultation that had already been planned for the proposed scheme. The approach is set out in Appendix 13.4.</p>
<p>An approach to the identification of vulnerable populations was not provided as part of the health baseline data. The impacts on health and wellbeing and health inequalities of the proposed scheme may have particular effect on vulnerable or disadvantaged populations, including those that fall within the list of protected characteristics. The assessments and findings of the Environmental Statement and any Equalities Impact Assessment should be cross referenced between the two documents, particularly to ensure the comprehensive assessment of potential impacts for health and inequalities and where resulting mitigation measures are mutually supportive. Baseline data should define and identify vulnerable populations which may be affected by the proposed scheme. In addition to health data this should encompass deprivation, demographics and other socio-economic factors.</p>	<p>Further information on how vulnerable groups have been identified is provided in the methodology section of Chapter 13: Population and human health [TR010060/APP/6.1]. The approach has been adapted to try to align with the preapplication consultation that had already been planned for the proposed scheme. The approach is set out in Appendix 13.4: Mental well-being impact assessment [TR010060/APP/6.3]. An Equality Impact Assessment [TR010060/APP/7.5] has been produced for the proposed scheme. The assessment within Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] has considered the potential for differential or disproportionate impacts on certain groups of people.</p>
<p>The scoping report identifies how non-motorised user (NMU) will be impacted through the loss or change in formal Public Rights of Way (PRoW), open space and the existing road network. Active travel forms an important part in helping to promote healthy weight environments and as such it is important that any changes have a positive long-term impact where possible. Changes to NMU routes have the potential to impact on usage, create displacement to other routes and potentially lead to increased road traffic collisions. We welcome the proposed scheme's opportunity to enhance the existing infrastructure that supports active travel and physical activity. We expect the proposal to contribute to improved provision for active travel, physical activity and access to green space. It is important to ensure that any impact on tranquillity in open spaces is considered.</p>	<p>The human health assessment in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] addresses these issues under the headings 'Active travel' and 'Access to greenspace and outdoor recreation'.</p>

Public Health England comment	National Highways response
<p>The overall risk to NMU/WCH (walking cycling and horse-riders) and impact on active travel should be considered on a case-by-case basis, taking into account, the number and type of users and the effect that the temporary traffic management system will have on their journey and safety.</p> <p>Any traffic counts and assessment should also, as far as reasonably practicable, identify informal routes used by NMU or potential routes used due to displacement.</p> <p>The final Environmental Statement should identify the temporary traffic management system design principles or standards that will be maintained with specific reference to NMU. This may be incorporated within the Code of Construction Practice.</p> <p>The final Environmental Statement should identify the temporary traffic management system design principles or standards that will be maintained with specific reference to NMU. This may be incorporated within the Code of Construction Practice.</p>	<p>Measures are included in the first iteration of the Environmental Management Plan [TR010060/APP/6.5] for maintaining active travel routes as far as practicable throughout the construction period, and for ensuring the safety of pedestrians and cyclists is considered.</p>

Table 1.14 Rivenhall Parish Council comments and responses

Rivenhall Parish Council comment	National Highways response
<p>Rivenhall Parish Council would request that the Planning Inspectorate should require the following information be included in the Environmental Statement which is important in the parish of Rivenhall:</p> <ol style="list-style-type: none"> <li>1. The impacts of construction and the finished, operational road with respect to noise, air quality and artificial light on those isolated properties that are retained close to the route and that Rivenhall End should enjoy clear benefits in terms of all these criteria compared to the current situation.</li> <li>2. The impacts of construction and the operational road in respect of traffic noise, air quality and artificial light on the landscape and habitats of the River Blackwater and its valley and the Rivenhall Brook.</li> </ol>	<p><u>Noise and vibration</u> During construction it is not possible to provide a benefit since the activities associated with construction make noise. However, impacts will be limited through the application of Best Practical Means. The need for noise insulation and temporary re-housing will also be considered. During operation there is likely to be clear benefits at the majority of properties in Rivenhall End. However, due to the re-location of the road, there may be a small number of properties that experience adverse effects. River Blackwater and Rivenhall Brook as also expected to experience minor increases in noise.</p> <p><u>Air Quality</u> During construction, adverse impacts will be mitigated through the application of control measures outlined in the first iteration Environmental Management Plan [TR010060/APP/6.5]. During operation there are likely to be benefits at the majority of properties in Rivenhall End due to the proposed carriageway relocation. However, due to this relocation, a small number of properties may experience an adverse effect in terms of air quality. These properties will be subject to air quality assessment. River Blackwater and its valley and the Rivenhall Brook were not found to be sensitive to nitrogen deposition from the proposed scheme.</p> <p><u>Artificial Lighting</u> The impacts of operational and construction lighting are considered in Chapter 8: Landscape and visual and Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].</p>
<ol style="list-style-type: none"> <li>3. Impacts on public rights of way and the need to reconnect/re-provide PRow not properly accommodated by the 1960s/1970s A12 construction.</li> </ol>	<p>The severance that the current road network causes is recognised. The proposed network comprises stopping up of road connections to reduce traffic impact, controlled pedestrian crossings, connecting PRow and more general walking/cycling routes alongside quiet routes to provide more attractive routes for leisure and other trips.</p>
<ol style="list-style-type: none"> <li>4. The need to overall limit to a minimum street lighting (other than at junctions) and to use the best environmental designs.</li> <li>5. The need to include substantial landscape planting along the new route to reduce visual impacts and noise to local residents and as seen from PRow, and to offset increased carbon dioxide emissions from traffic.</li> </ol>	<p>Modern lighting will be used including use of efficient full cut-off lighting technology and light emitting diodes. Luminaires will have a glare rating of G4 or higher, which means they would be designed with zero tilt to produce no upward glare and minimal back light. Landscape mitigation presented on Figure 2.1: Environmental Masterplan [TR010060/APP/6.2] seeks to reduce lighting effects. However, the landscape design also seeks to create visual interest for road users, such as by incorporating views out from the road, in accordance with DMRB LD 117 Landscape design (Highways England, 2020).</p> <p>Planting has not been specified for noise mitigation. Bespoke mitigation for noise impacts, including acoustic barriers, is presented within Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].</p>
<ol style="list-style-type: none"> <li>6. The need to consider the relationship between the remaining de-trunked section of the A12 through Rivenhall End and the new A12 route including the crucial issue of HGVs being routed away from Rivenhall End village and overall traffic flows in the parish. It is not currently clear what the net impacts will be given the potential reduction in junctions being proposed by the applicant.</li> </ol>	<p>The network connecting Rivenhall End to the de-trunked A12 has been remodelled to minimise the adverse effects of traffic following the realignment of the A12 in this area. The details for treatment of the detrunked A12 have not yet been finalised and this will be developed in liaison with ECC at detailed design. Locations of these are shown on the De-trunking and Stopping-Up Plans [TR010060/APP/2.10].</p>
<ol style="list-style-type: none"> <li>7. The need to support modal shift via integrated planning, alongside ECC, of bus routes and bus stops along the route corridor including using the de-trunked sections.</li> <li>8. The need to support modal shift by the provision of a segregated cycleway along the whole route corridor using the de-trunked sections and also new cycleway sections that avoid sending cyclists through local town and village centres. There should also be safe links to local railways stations along the route including Witham and Kelvedon.</li> </ol>	<p>The location of future bus stops has not yet been determined. The de-trunking proposals which are being developed in liaison with ECC will include both public transport routes (and connecting walking routes) and dedicated walking-cycling routes along the de-trunked A12 sections. In addition, the scope is being investigated to provide additional improvements in walking and cycling routes, funded by Designated Funds, which is a budget that can provide additional improvements over and above the mitigation of the proposed scheme impact.</p>

Table 1.15 Royal Mail comments and responses

Royal Mail comment	National Highways response
<p>Royal Mail requests that the Transportation section and the Transport Assessment within Highways England's Environmental Statement includes information on the needs of major road users (including Royal Mail). The Environmental Statement should acknowledge the requirement to ensure that major road users are not disrupted through full advance consultation at the appropriate stages in the DCO and development processes.</p>	<p>The project team acknowledges the impact that the proposed scheme could have on the Royal Mail Operation and the capacity to deliver their contractual objectives. Reference as to how liaison will be carried out has been included on the Draft Development Consent Order (DCO) Schedules, to reassure that traffic during construction will be maintained at existing levels and communication between the stakeholders will continue to ensure that mitigation measures are adequate for the stakeholders. Please refer to the Outline Construction Traffic Management Plan, section 4 Communication and Engagement [TR010060/APP/7.7] for further details.</p>
<p>Royal Mail requests that it is fully pre-consulted (at least one month in advance) by Highways England and its contractors on any proposed road closures / diversions/ alternative access arrangements, hours of working and the content of the Construction Traffic Management Plan. The Environmental Statement should acknowledge the need for this consultation with Royal Mail and other relevant major road users.</p>	<p>The project team acknowledges the impact that the proposed scheme could have on the Royal Mail Operation and the capacity to deliver their contractual objectives. Reference as to how liaison will be carried out has been included on the Draft Development Consent Order (DCO) Schedules, to reassure that traffic during construction will be maintained at existing levels and communication between the stakeholders will continue to ensure that mitigation measures are adequate for the stakeholders. Please refer to the Outline Construction Traffic Management Plan, section 4 Communication and Engagement [TR010060/APP/7.7] for further details.</p>

Table 1.16 Suffolk County Council comments and responses

Suffolk County Council comment	National Highways response
<b>Highways and traffic</b>	
<p>Paragraph 5.3.2 sets out that ‘a traffic model was built at PCF Stage 2 which was used to understand the likely impacts on the road network (including on air quality and noise) and to inform the options appraisal. A new traffic model is being built for PCF Stage 3, the output of which will feed into the EIA. Updated traffic modelling outputs from the new model were not available at the time of writing this Environmental Scoping Report.’</p> <p>Further information is sought on the scope of the transport study area covered by the transport model and details of the assessment being undertaken. Suffolk County Council would like to understand to what degree the impacts of increasing capacity on the A12 would have on wider strategic transport movements, most notably on the A131 through communities and on the A12 to the north (this includes the Copdock interchange and a number of A12 junctions that have short merges such as those that serve East Bergholt and Capel St Mary). Further information is also sought on whether an assessment of ‘induced demand’ is proposed to be undertaken and what the potential implications on the wider strategic transport network are.</p>	<p>The scope of the transport study area is included within the Combined Modelling and Appraisal report [TR010060/APP/7.3]. The transport study area includes the A12 to the north of the proposed scheme and the A131. In more detail, the traffic model covers the whole of England, Scotland and Wales in order to capture the start and end of every trip. The Fully Modelled Area comprises two parts – the Detailed Simulation Area and the Rest of the Fully Modelled Area (RotFMA, also known as the ‘Buffer Area’). The Detailed Simulation Area covers the A12 and the areas around Chelmsford, Braintree, Colchester, Maldon and the towns and villages in between. The RotFMA comprises the rest of Essex, as well as some key strategic links that provide access into or through Essex, including the A14, M11 and the north east quadrant of the M25. Variable Demand is included within the traffic forecasts, the results of which have been used to identify the Affected Road Network for the air quality and noise assessments in Chapters 6 and 12 respectively, of the Environmental Statement [TR010060/APP/6.1] and which excludes Suffolk.</p>
<p>Paragraph 5.3.3 sets out that it is assumed that ‘the existing A12 would remain open during construction. Traffic management would be required for works along the online sections’. Further understanding is sought as to whether an assessment of driver delay on the A12 is proposed as part of the assessment of construction of the proposed scheme given the potential impacts.</p>	<p>The Economic Assessment Package takes into account traffic delays during construction. This high-level assessment calculates that there will be an approximate £50m economic disbenefit due to delays caused by construction roadworks. This is discussed within the Combined Modelling and Appraisal report [TR010060/APP/7.3].</p>
<p>Consideration should be given to the origin of the workforce and materials for construction of the proposed scheme. It is assumed that workforce will travel to/from the proposed scheme via the regional road network and that materials will mainly use the strategic road network, with associated impacts in the wider area that should be understood, including on local roads. Further information is sought on these changes in traffic flows. Further to these impacts, there is a number of other large scale construction projects (particularly NSIPs) in Suffolk that are currently in the planning process and that may impact on the availability and draw of workforce and materials, as well as impacting on route choice and potential operation. As East Anglia One North, East Anglia Two and Sizewell C (SZC) have all been submitted to the examining authority, consideration should be given to the inclusion of construction traffic associated with these schemes within the development assessment, again, as this may impact on origins of workforce and route choice, as well as understanding the potential cumulative impacts given that the current programmes of each projects could coincide. Consideration should also be given to the project’s potential to disrupt deliveries and the programmes of the aforementioned NSIPs and how this can be managed.</p>	<p>The cumulative effects of material assets and waste have been scoped out of Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1] as per ID 4.11.3 in Table 1.1.</p> <p>East Anglia One and Two are offshore wind farm projects, located approximately 80km from the proposed scheme. They are not in the study area for cumulative effects and so were not identified in the long list of projects. The long list has been consulted on via the Preliminary Environmental Impact Report.</p> <p>Sizewell C is also outside of the cumulative effects study area, as it’s approximately 65km from the proposed scheme. However, following consultees’ comments, it has been included in the long list of other developments. When filtering the long list to create the short list, it was identified that Sizewell’s construction vehicle numbers using the A12 would not be significant, according to their own assessment. Significant deliveries of materials would be by sea. Construction workers at Sizewell would be expected to live within 60 minutes of the site, which means that they would live to the north of Ipswich and would not use the A12 in the proposed scheme area. Sizewell C therefore was not included in the shortlist for the cumulative effects assessment.</p>
<p>Given the potential for a number of transport impacts associated with the proposed scheme, as well as cumulative impacts, further information is sought on the potential impact of construction traffic on the local road network (particularly the A131) and depending on the extent of the impacts the need for assessment of associated transport impacts including severance, pedestrian delay, fear and intimidation, amenity, noise and air quality.</p>	<p>There is unlikely to be a significant volume of construction traffic using the A131 or the local road network in Suffolk. The construction strategy will aim to keep construction HGVs on the A12 and the Strategic Road Network wherever possible. Further information is shown on the permissive/restricted/non-permissive route plans in an appendix to the Outline Construction Traffic Management Plan [TR010060/APP/7.7]. Construction workers are likely to live in the surrounding towns, primarily Chelmsford and Colchester, but also Braintree, Witham and Maldon, and hence construction traffic associated with the workers is unlikely to use the A131 or local roads in Suffolk.</p>

Suffolk County Council comment	National Highways response
<p>The below provides a summary of further information that is sought by the LHA to understand impacts:</p> <ul style="list-style-type: none"> <li>• The origin and potential environmental impacts of traffic associated with the construction workforce, especially on the local Suffolk road network.</li> <li>• The origin and potential environmental impacts of construction freight traffic on wider road network, including A12/A14 Copdock junction as well as A12 junctions to the north of the proposed scheme.</li> <li>• The cumulative impact of construction traffic in combination with other largescale construction schemes.</li> <li>• The potential traffic and associated environmental impacts of the proposed scheme on rerouting wider strategic traffic.</li> <li>• The potential traffic and associated environmental impacts of induced demand.</li> </ul>	<p>Construction workers are likely to live in the surrounding towns, primarily Chelmsford and Colchester, but also Braintree, Witham and Maldon, and hence construction traffic associated with the workers is unlikely to use the local road network in Suffolk. The construction strategy will aim to keep construction HGVs on the A12 and the Strategic Road Network wherever possible. It is likely that, given the proposed scheme's proximity to the M25 and the south east, the majority of construction HGVs will travel from the M25, A130 Tilbury and A120 / M11 directions, with only a minority approaching via the A14 / A12 Copdock Interchange. Induced demand and rerouting of traffic is included within the traffic forecasting and hence included in the relevant assessments in the Environmental Statement [TR010060/APP/6.1]. Further information is shown on the permissive/restricted/non-permissive route plans in an appendix to the Outline Construction Traffic Management Plan [TR010060/APP/7.7]. Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1] considers the cumulative impacts of construction traffic for the proposed scheme in addition to that for other relevant surrounding schemes, where available.</p>
<b>Economic development</b>	
<p>The main concern raised by economic development is the absence of reference to or assessment of socio-economic effects which need to be considered within the EIA process.</p> <p>Other considerations raised by Economic Development that resonate with the LHA include, the presence of other largescale construction schemes. The construction period for the widening scheme is expected to be 2023 to 2027, during this time period we are expecting significant activity on a number of other NSIPs that will put pressure on available labour.</p>	<p>In contrast to some of the other National Policy Statements, the National Policy Statement for National Networks does not require the applicant to include an assessment of socio-economic impacts in the Environmental Statement. Nevertheless, Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers impacts on socio-economics as one of the wider determinants of human health, under the heading 'Access to services, employment, education facilities and skills' and how these may influence health outcomes in local communities.</p> <p>Consideration of the contribution to cumulative impacts on employment and skills has been made in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>SZC will be in its Civil construction phase and ScottishPower Renewables will also be undertaking its three-year onshore construction phase. These projects alone have the potential to draw in all available local civils construction labour leading to negative displacement effects in our local labour market. With the additional pressure of another local NSIP providing a draw on an already pressured labour market this could be further exasperated.</p>	<p>Consideration of the contribution to cumulative impacts on employment and skills has been made in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>
<p>This proposed scheme could also have a significant cumulative impact on the SZC transport modelling assumptions. If labour in the South of the county is expected to be drawn as employment at SZC and modelled as such if another scheme, such as this, is delivered it will significantly change these assumptions and we may see more labour being drawn from more North and/or West of the county.</p> <p>Economic Development does also offer more positive feedback, acknowledging that the proposed scheme has the opportunity to provide legacy employment/opportunity for the region, creating a workforce and talent pools of people that can take up the opportunities that SZC and other projects present. Dependant on timing, this project can either support a lead into major projects or help with re-brokering of workers and companies as projects demobilise.</p> <p>With the above being considered, we would expect to see socio-economic effects scoped into any Environmental Statement.</p>	<p>In contrast to some of the other National Policy Statements, the National Policy Statement for National Networks does not require the applicant to include an assessment of socio-economic impacts in the Environmental Statement. Nevertheless, Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1] considers impacts on socio-economics as one of the wider determinants of human health, under the heading 'Access to services, employment, education facilities and skills' and how these may influence health outcomes in local communities.</p> <p>Consideration of the contribution to cumulative impacts on employment and skills has been made in Chapter 16: Cumulative effects assessment, of the Environmental Statement [TR010060/APP/6.1].</p>

**Table 1.17 Witham Town Council comments and responses**

<b>Witham Town Council comment</b>	<b>National Highways response</b>
Members of Witham Town Council's Environment Committee would like to pass on their concerns regarding increased pollution and noise that could result from the proposed improvements. Please can this be noted as part of your consultation.	The potential noise impacts from the proposed scheme have been assessed in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1]. Where possible mitigation and enhancement measures have been provided in Chapter 12 and the Register of Environmental Actions and Commitments, which is included in the first iteration Environmental Management Plan [TR010060/APP/6.5].

**Table 1.18 Braintree District Council comments and responses (post Scoping Opinion response received 15 February 2021)**

Braintree District Council comment	National Highways response
Braintree District Council consider that the Scoping Report has met the regulatory requirements set out in Part 4, Section 15(2) of the EIA Regulations which state that a scoping request must include 'a plan sufficient to identify the land; a brief description of the nature and purpose of the development and of its possible effects on the environment; and such other information or representations as the person making the request may wish to provide or make.'. The Scoping Report provides proportionate detail on the methodologies to be employed for each topic.	Noted.
The Applicant should ensure the details of the proposed methods underpinning each environmental topic are agreed prior to submission of the Environmental Statement with the relevant consultees, which would include for example, agreeing baseline survey locations and study areas, agreeing viewpoint locations etc. This should form part of the on-going consultation into the EIA process.	Braintree District Council have been consulted regularly at both member and officer level. This has included agreeing representative viewpoints for the landscape and visual assessment in Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1].
<b>Population and human health</b>	
The Council fully supports the identification of the importance of assessing the impact of the proposal upon walkers, cyclist and horse riders and the intention to capitalise on the opportunities the A12 project could provide for them. Improving Cycle route provision is a particular focus in the District at present and the Council would wish to see full and detailed consideration given to this in the Environmental Statement and the proposed scheme as a whole, alongside pedestrian and horse riding routes.	Impacts on walkers, cyclist and horse riders are detailed in Appendix 13.3: Land use and accessibility assessment tables [TR010060/APP/6.3] on a route by route basis, with the main issues summarised in the land use and accessibility assessment reported in Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1]. The proposed scheme has sought, as far as possible, to not only mitigate affected routes but to provide improved routes for active travel for utility journeys and leisure purposes. These have been designed to be as Coherent, Direct, Safe, Comfortable, and Attractive as possible, in line with the objectives set out in LTN 1/20 Cycle Infrastructure design, which is relevant for all walking, cycling and equestrian infrastructure. In addition opportunities are being investigated to provide further improvements using Designated Funds budgets, where more connectivity can be created beyond the more immediate proposed scheme extents.
The Scoping Report also states that 'it is assumed that any PRow or other routes temporarily severed by the proposed scheme would be re-instated' but that diversions and closures may be required with associated re-routing. More detailed information is required on this in due course to ensure that the above assumption is correct and that any diversions/re-routing is/are acceptable. The Ramblers Association should also be consulted in this regard.	Permanent closures of PRowS, as well as new or improved PRowS, footways, and cycle tracks, are presented on the Streets, Rights of Way and Access Plans [TR010060/APP/2.6]. These plans should be viewed in conjunction with chapter 5 of the Design and Access Statement [TR010060/APP/7.4] and Chapter 2: The proposed scheme, of the Environmental Statement [TR010060/APP/6.1]. Temporary diversions of PRowS are shown in the Outline Construction Traffic Management Plan [TR010060/APP7.7]. Essex Area Ramblers (part of RA) were represented at a WCH Customer Focus Workshop held 4 December 2020 and invited to a number of other WCH workshops throughout the development of the proposed scheme.
The Scoping Report sets out housing allocations and applications in the study area in Table 13.2 (and corresponding figure 13.1 in appendices). Number of houses allocated, status of planning applications and extent of residential and strategic growth locations are not quite as accurate as they could be but is a reasonable broad reflection of housing growth.	The housing allocations, applications and strategic growth locations has been updated with the data provided by the Council for Chapter 13: Population and human health, of the Environmental Statement [TR010060/APP/6.1].
<b>Noise and vibration</b>	
Specific existing noise mitigation barriers which may need upgrading are identified at paragraph 12.3.7 of the Scoping Report. The Council would request that the following developments are also specifically considered as both were recently granted planning permission and the noise mitigation measures required for each were based on the current (dual laned) A12, a major source of noise for each scheme: 17/00973/FUL – Land at Bury Farm, Hatfield Peverel, 50 dwellings (currently under construction) 19/01803/FUL – Bury Farm, Hatfield Peverel, 50 dwellings (extant planning permission)	The dwellings within these developments have been included within the noise assessment in Chapter 12: Noise and vibration, of the Environmental Statement [TR010060/APP/6.1].

Braintree District Council comment	National Highways response
<b>Landscape Impact</b>	
The Scoping Report identifies at paragraph 8.3.1 a number of baseline documents upon which the LVIA would be based. This list should also include the Braintree District Settlement Fringes Landscape Character Assessment 2015 which sits alongside but is more finely grained than the 2006 study.	The assessment of landscape effects reported within Chapter 8: Landscape and visual [TR010060/APP/6.1] has been based on published district scale landscape character assessments, which cover the study area at a consistent scale and therefore provide a consistent basis for the assessment. The published district scale landscape character assessments are also at a scale and level of detail that is proportionate to the scale and extent of the study area.
The Council would also request that maximum use of supporting visual information, such as plans, cross sections, aerial photography/drone footage and CGI imagery/‘fly throughs’ or ‘fly overs’ is employed by the Applicant to assist all parties to comprehensively understand the landscape and visual impact of the proposal, particularly given the physical expanse of the application site.	The Environmental Statement [TR010060/APP/6.1] includes Figure 2.1: Environmental masterplan, supporting Figure 2.2: Illustrative cross sections and Figure 8.5: Photomontages [TR010060/APP/6.2]. A 3D visualisation (fly/drive through) has been produced alongside the General Arrangement Plans [TR010060/APP/2.9] to support the DCO submission.
<b>Biodiversity</b>	
The Scoping Report sets out at paragraph 9.5 a range of potential Ecological mitigation measures. The Council is in agreement that biodiversity mitigation and enhancement measures are of key importance, particularly for a scheme of this size. More information is required as to the detail of such measures including location, justification and importantly the long term management strategy for new or enhanced habitat.	Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] details mitigation measures including locations, justifications and specifics, where relevant. The chapter also details proposals for monitoring, which will be refined at the detailed design stage to include targets and triggers for remedial action.
The Scoping Report also makes specific mention of tree and hedgerow planting to create linear habitats and provide new connectivity between existing green habitat areas. The proposed scheme is extensively linear by necessity and provides a unique opportunity to carry out the above on a major scale. Again, detailed information is required to understand the Applicants approach to doing this successfully and in a meaningful way. New planting would also need to be quantified against the loss of existing trees and hedgerows which could be extensive in its own right.	Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1] includes specific detail of planned linear planting, including figures that show locations of the planned planting. The number of features created would greatly exceed the number of existing trees and hedgerows that would be lost or impacted and is also quantified in Chapter 9.
<b>Geology and soils</b>	
The majority of Braintree District consists of best and most versatile agricultural land. This means that strategic scale development inevitably results in the loss of such land, sometimes at a significant scale. Although the proposed scheme is linear in nature the cumulative impact of the loss of such land (i.e. parts of many agricultural fields) could be major and the Council request that the Environmental Statement give due consideration to this and clearly identifies the quantity, locations and categories of such land which would be lost.	An Agricultural Land Classification survey has been undertaken to determine the quantity, locations and categories of agricultural land which would be lost as a result of the proposed scheme. This has been reported in Chapter 10: Geology and soils, of the Environmental Statement [TR010060/APP/6.1].
<b>Lighting</b>	
It is noted that the Scoping Report references the impact of lighting (both permanent lighting and temporary construction lighting) in detail and sets the parameters for detailed lighting assessments to be completed. The Council consider this to be essential and are supportive of the applicant’s comprehensive approach to this, both in terms of ecological and visual/landscape impact.	The impacts of lighting are considered in Chapter 8: Landscape and visual and Chapter 9: Biodiversity, of the Environmental Statement [TR010060/APP/6.1].
It is noted that the construction phase of the development will be ongoing over several years and will require haul roads, although details of such is not yet provided. The impact of ‘temporary’ construction lighting will therefore be particularly significant in this regard, especially given the site’s very rural setting for the majority of its site boundaries.	Temporary construction lighting has been incorporated within the assessment of landscape and visual effects reported within Chapter 8: Landscape and visual, of the Environmental Statement [TR010060/APP/6.1].