

SCOPING OPINION:

Proposed Lower Thames Crossing

Case Reference: TR010032

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

December 2017

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1. INTRODUCTION

1.1 Background

- 1.1.1 On 02 November 2017, the Planning Inspectorate (the Inspectorate) on behalf of the Secretary of State (SoS) received a scoping request from Highways England (the Applicant) under Regulation 10 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) for the proposed Lower Thames Crossing (the Proposed Development).
- 1.1.2 In accordance with Regulation 10 of the EIA Regulations, an Applicant may ask the SoS to state in writing its opinion *'as to the scope, and level of detail, of the information to be provided in the environmental statement'*.
- 1.1.3 This document is the Scoping Opinion (the Opinion) provided by the Inspectorate on behalf of the SoS in respect of the Proposed Development. It is made on the basis of the information provided in the Applicant's report entitled 'Lower Thames Crossing Environmental Impact Assessment – Scoping Report' (the Scoping Report). This Opinion can only reflect the proposals as currently described by the Applicant. The Scoping Opinion should be read in conjunction with the Applicant's Scoping Report.
- 1.1.4 At the same time as submitting the request for a Scoping Opinion the Applicant also notified the SoS under Regulation 8(1)(b) of the EIA Regulations that they propose to provide an Environmental Statement (ES) in respect of the Proposed Development. Therefore, in accordance with Regulation 6(2)(a) of the EIA Regulations, the Proposed Development is determined to be EIA development.
- 1.1.5 Regulation 10(9) of the EIA Regulations requires that before adopting a scoping opinion the Inspectorate must take into account:
- (a) *any information provided about the proposed development;*
 - (b) *the specific characteristics of the development;*
 - (c) *the likely significant effects of the development on the environment;*
and
 - (d) *in the case of a subsequent application, the environmental statement submitted with the original application.*
- 1.1.6 This Opinion has taken into account the requirements of the EIA Regulations as well as current best practice towards preparation of an ES.
- 1.1.7 The Inspectorate has consulted on the Applicant's Scoping Report and the responses received from the consultation bodies have been taken into account in adopting this Opinion (see Appendix 2).

- 1.1.8 The points addressed by the Applicant in the Scoping Report have been carefully considered and use has been made of professional judgement and experience in order to adopt this Opinion. It should be noted that when it comes to consider the ES, the Inspectorate will take account of relevant legislation and guidelines. The Inspectorate will not be precluded from requiring additional information if it is considered necessary in connection with the ES submitted with the application for a Development Consent Order (DCO).
- 1.1.9 This Opinion should not be construed as implying that the Inspectorate agrees with the information or comments provided by the Applicant in their request for an opinion from the Inspectorate. In particular, comments from the Inspectorate in this Opinion are without prejudice to any later decisions taken (eg on submission of the application) that any development identified by the Applicant is necessarily to be treated as part of a Nationally Significant Infrastructure Project (NSIP) or associated development or development that does not require development consent.
- 1.1.10 Regulation 10(3) of the EIA Regulations states that a request for a scoping opinion must include:
- (a) *a plan sufficient to identify the land;*
 - (b) *a description of the proposed development, including its location and technical capacity;*
 - (c) *an explanation of the likely significant effects of the development on the environment; and*
 - (d) *such other information or representations as the person making the request may wish to provide or make.*
- 1.1.11 The Inspectorate considers that this has been provided in the Applicant's Scoping Report. The Inspectorate is satisfied that the Scoping Report encompasses the relevant aspects identified in the EIA Regulations.
- 1.1.12 In accordance with Regulation 14(3)(a) where a scoping opinion has been issued in accordance with Regulation 10, an ES accompanying an application for an order granting development consent should be based on "*the most recent scoping opinion adopted (so far as the proposed development remains materially the same as the proposed development which was subject to that opinion)*".
- 1.1.13 The Inspectorate notes the potential need to carry out an assessment under The Conservation of Habitats and Species Regulations 2017. As stated in paragraph 5.12.5 of the Scoping Report this document must be co-ordinated with the EIA, to avoid duplication of information between assessments. From the information in the Scoping Report it does not appear that the Conservation of Offshore Marine Habitats and Species Regulations 2017 will be triggered.

1.2 The Planning Inspectorate's Consultation

- 1.2.1 In accordance with Regulation 10(6) of the EIA Regulations the Inspectorate has consulted the consultation bodies before adopting a scoping opinion. A list of the consultation bodies formally consulted by the Inspectorate is provided at Appendix 1. The consultation bodies have been notified under Regulation 11(1)(a) of the duty imposed on them by Regulation 11(3) of the EIA Regulations to make information available to the Applicant relevant to the preparation of the ES. The Applicant should note that whilst the list can inform their consultation, it should not be relied upon for that purpose.
- 1.2.2 The list of respondents who replied within the statutory timeframe and whose comments have been taken into account in the preparation of this Opinion is provided, along with copies of their comments, at Appendix 2, to which the Applicant should refer in undertaking the EIA.
- 1.2.3 The ES submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies. It is recommended that a table is provided in the ES summarising the scoping responses from the consultation bodies and how they are, or are not, addressed in the ES.
- 1.2.4 Any consultation responses received after the statutory deadline for receipt of comments will not be taken into account within this Opinion. Late responses will be forwarded to the Applicant and will be made available on the Inspectorate's website. The Applicant should also give due consideration to those comments in carrying out the EIA.

1.3 Article 50 of the Treaty on European Union

- 1.3.1 On 23 June 2016, the United Kingdom (UK) held a referendum and voted to leave the European Union (EU). On 29 March 2017 the Prime Minister triggered Article 50 of the Treaty on European Union, which commenced a two year period of negotiations regarding the UK's exit from the EU. There is no immediate change to legislation or policy affecting national infrastructure. Relevant EU Directives have been transposed into UK law and those are unchanged until amended by Parliament.

2. THE PROPOSED DEVELOPMENT

2.1 Introduction

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

2.2 Description of the Proposed Development

2.2.1 The Applicant's description of the Proposed Development, its location and technical capacity (where relevant) is provided in Scoping Report Chapters 1 and in more detail within Chapter 2.

2.2.2 The Proposed Development is to construct a new connecting road system within the counties of Kent and Essex. The new road system includes a new crossing of the River Thames to the east of London and the existing Dartford Crossing and Queen Elizabeth II Bridge. The Proposed Development will connect the A2 east of Gravesend to the M25 in Essex.

2.2.3 The Proposed Development is being designed as a high speed route approximately 31km long with grade separated junctions and a speed limit of 120km/h or 70mph. Between the A2 and the A13 the Proposed Development will be a dual three lane carriageway. The section north of the A13 will be a dual two-lane carriageway connecting to the M25. The route includes a 3.5km crossing under the River Thames by means of two bored tunnels. From the A2 the route extends north towards the A226 which it crosses, before reaching the proposed tunnel south portal location near the settlement of Chalk. The proposed tunnel underneath the Thames has a north portal proposed approximately 1km south of West Tilbury. The route is aligned between West and East Tilbury, passing to the north of Chadwell St Mary to the A13 around Orsett where a new junction is proposed. From Orsett the route will join the M25 south of Junction 29 and west of North Ockendon. The final section of the Proposed Development ends east of Upminster, north of Junction 29 of the M25. A new junction near East Tilbury and section of road towards Tilbury Port will also be constructed. The indicative route alignment is explained in Chapter 1 of the Scoping Report.

2.2.4 Indicative plans depicting the extent of the Proposed Development have been provided in the Scoping Report. New junctions are proposed at the following locations; on the A2; near East Tilbury; at Tilbury Port; at the A13, and the M25. A number of bridges and other structures would be constructed as part of the Proposed Development, as well as a drainage scheme involving a number of engineered features. Lighting and technology installation, including signage, would also form part of the Proposed Development.

- 2.2.5 The area in which the Proposed Development is situated is comprised of a combination of expanses of agricultural land, grasslands, floodplain, woodland, existing infrastructure and buildings, and leisure and recreational facilities (golf courses and a shooting range). The Proposed Development is also partly within an Area of Outstanding Natural Beauty (AONB) and a Site of Special Scientific Interest (SSSI) at its southern extent. There are also areas of ancient woodland, local nature reserves, and conservation areas within and around the proposed DCO boundary. On the southern side of the Thames the proposed tunnel is situated under land designated as a Ramsar site and associated SSSI, land identified by the Applicant as potential functional habitat related to this designation and the adjacent Special Protection Area (SPA), and land designated as a Local Wildlife Site.

2.3 The Planning Inspectorate's Comments

Description of the Proposed Development

- 2.3.1 The Scoping Report provides a description of the design, size, and location of the Proposed Development. Figures 1 and 2 provide scale maps of the Proposed Development and Chapter 2 provides a description of the different elements of the Proposed Development. The Scoping Report provides some estimates of the physical characteristics of the Proposed Development, and Figure 2 presents the proposed route alignment and the proposed permanent and temporary land-take required. The Applicant is currently investigating financing options which may be relevant to the assessment of operational effects.
- 2.3.2 The Inspectorate notes that the design of the Proposed Development is not yet fixed and will be subject to refinement as the detailed design and EIA processes progress. The Inspectorate understands from the information in the Scoping Report that this includes the junction locations and arrangements along the length of the scheme. The precise land-take to be included in the DCO boundary should reflect the construction land take requirements, earthworks design, ecological mitigation areas and flood compensation areas. The intention to refine the design in light of stakeholder engagement is noted and the Inspectorate highlights the interface between the proposed link road to Tilbury Port and the separate Tilbury 2 NSIP proposal at the same location.
- 2.3.3 Section 2.4 of the Scoping Report presents information on the likely earthworks design, including the proposed tunnel portals. The likely depths of excavations and the likely vertical dimensions applicable to the assessment are not presented. The Inspectorate considers that these aspects will be of high importance in determining the significant effects of the Proposed Development. As such this information must be presented in the ES, with the use of defined parameters where flexibility remains sought. The Applicant's attention is drawn to the response from the Port of London Authority (PLA) and the comments regarding tunnel design and the implications for users of the River Thames (Appendix 2). This highlights the need to address the depth of the tunnel under the River

Thames, and additionally, to provide details of any protection measures proposed.

- 2.3.4 The description of the Proposed Development in the ES should include specific elements such as key structures and drainage design. It should be sufficiently detailed to support a robust assessment throughout the ES and at relevant aspect chapters. The ES should clearly describe and depict the location of cuttings and embankments along the proposed route. If the assessment is based on design parameters this should be clearly explained and be consistently applied throughout the ES.
- 2.3.5 The Inspectorate notes that a number of key decisions on the construction approach and method remain to be decided. This includes options relating to a new or existing jetty and associated works as well as decisions relating to the removal and disposal of excavated material. In relation to the jetty the ES should clearly describe the anticipated design of such features/works and how they influence specific assessments eg hydrodynamic assessments. The PLA have made specific reference to this in their response included at Appendix 2.
- 2.3.6 The ES should describe the approach to construction including the anticipated phasing of works, demolition requirements, likely number of construction workers, the size scale and location of compounds, the approach to material/waste handling in particular tunnel excavation spoil, and traffic management measures.
- 2.3.7 The Scoping Report states in Paragraph 5.8.5 that decommissioning of the Proposed Development is not envisaged so will not be included in the EIA. The Inspectorate considers that this is a reasonable approach taking into account the information in the Scoping Report and the specific characteristics of the Proposed Development as a whole. However, the Inspectorate considers that any decommissioning associated with dismantling and replacing particular elements of the Proposed Development once they reach the end of their design life, for example the potential proposed jetty or rail sidings, should be assessed where significant effects are likely to occur.
- 2.3.8 The ES should include a description of the nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) to be used during construction. The ES should describe and assess the likely significant effects associated with any particular technologies or substances proposed to be used for the construction phase. The Inspectorate considers that this should include energy usage where significant effects are likely to occur.
- 2.3.9 The Inspectorate notes that there are a number of existing utility assets in the area which may be affected by the Proposed Development. A number of responses have been provided by consultees (Appendix 2) in this regard including from; Anglian Water, Cadent Gas Ltd, the Health and Safety Executive (HSE) (in terms of major accident hazards), and National Grid. Royal Mail Group Ltd also indicate that the Proposed

Development may affect their operations in the wider area particularly during construction. The ES should explain the anticipated impacts to existing assets from the Proposed Development and assess any associated significant environmental effects.

Alternatives

- 2.3.10 The EIA Regulations require that the Applicant provide 'A description of the reasonable alternatives (for example in terms of development design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects'.
- 2.3.11 The Inspectorate would expect to see a discrete section in the ES that provides details of the alternatives considered and the reasoning for the selection of the chosen option(s), including a comparison of the environmental effects.
- 2.3.12 Chapter 3 of the Scoping Report provides a description of the alternatives considered before deciding in favour of the Proposed Development. The Route Options considered and the selection process (including reasons that support the chosen alignment) are set out and this includes consideration of environmental effects. Specific alternatives in regard to different technologies and materials used are not included, due to the fact these aspects are yet to be finalised.

Flexibility

- 2.3.13 The Inspectorate notes the intention to present the project design in the ES in line with the principles set out in the Inspectorate's Advice Note 9 'Using the 'Rochdale Envelope'¹.
- 2.3.14 The Proposed Development parameters will need to be consistently and clearly defined in both the draft DCO (dDCO) and in the accompanying ES. At the time of application, any Proposed Development parameters should not be so wide-ranging as to effectively represent different developments. It is a matter for the Applicant, in preparing an ES, to consider whether it is possible to robustly assess a range of impacts resulting from a large number of undecided parameters. The description of the Proposed Development in the ES must not be so wide that it is insufficiently certain to comply with the requirements of Regulation 14 of the EIA Regulations.

¹ Advice Note nine: Using the Rochdale Envelope. 2012. Available at: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

2.3.15 It should be noted that if the Proposed Development changes substantially during the EIA process and prior to submission of the application the Applicant may wish to consider requesting a new scoping opinion.

3. EIA APPROACH

3.1 Introduction

- 3.1.1 This section contains the Inspectorate's specific comments on the scope, and level of detail of information to be provided in the Applicant's ES. General advice on the presentation of an ES is provided in the Inspectorate's Advice Note 7 'Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping'² and associated appendices.
- 3.1.2 Aspects/matters are not scoped out unless specifically addressed and justified by the Applicant, and confirmed as being scoped out by the Inspectorate. The ES should be based on the Scoping Opinion in so far as the Proposed Development remains materially the same as the Proposed Development described in the Applicant's Scoping Report. The Inspectorate has set out in this Opinion where it has/has not agreed to scope out certain aspects or matters on the basis of the information available at this time. The Inspectorate is content that this should not prevent the Applicant from subsequently agreeing with the relevant consultees to scope such aspects/matters out of the ES, where further evidence has been provided to justify this approach. However, in order to demonstrate that the aspects/matters have been appropriately addressed, the ES should explain the reasoning for scoping them out and justify the approach taken.
- 3.1.3 Where relevant, the ES should provide reference to how the delivery of measures proposed to prevent/minimise adverse effects is secured through DCO requirements (or other suitably robust methods) and whether relevant consultees agree on the adequacy of the measures proposed.

3.2 Relevant National Policy Statements (NPSs)

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

² Advice Note seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping. Available from:
<https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

3.3 Scope of Assessment

General

- 3.3.1 The Inspectorate recommends that in order to assist the decision-making process, the Applicant uses tables:
- To demonstrate how the assessment has taken account of this Opinion;
 - To identify and collate the residual effects after mitigation for each of the aspect chapters, including the relevant interrelationships and cumulative effects;
 - To set out the proposed mitigation and/or monitoring measures including cross-reference to the means of securing such measures (eg a dDCO requirement);
 - To describe any remedial measures that are identified as being necessary following monitoring; and
 - To identify where details in the 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 ES.
- 3.3.2 The ES should include details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.
- 3.3.3 The Inspectorate considers that where a DCO application includes works described as 'associated development', that could themselves be defined as an improvement of a highway, the Applicant should ensure that the ES accompanying that application distinguishes between; effects that primarily derive from the integral works which form the proposed (or part of the proposed) NSIP and those that primarily derive from the works described as associated development, for example through a suitably compiled summary table. This will have the benefit of giving greater confidence to the Inspectorate that what is proposed is not in fact an additional NSIP defined in accordance with s22 of the PA2008.
- 3.3.4 The Inspectorate notes that it is proposed in paragraph 5.5.4 to consider effects on human health in the People and Communities chapter, to be informed by other chapters including the Air Quality and Noise and Vibration chapters. The Inspectorate has had regard to the information provided in the Scoping Report and has taken into account the nature and characteristics of the Proposed Development and is generally content with this approach. However, the Inspectorate considers that human health effects may also be relevant to soil handling and waste management, which is understood to be assessed within the 'Geology and Soils' and the 'Materials' chapters respectively, and to the Road Drainage and Water Environment chapter. Public Health England (PHE) have also provided comment in their scoping consultation response,

contained in Appendix 2 of this Opinion, on the approach to assessing effects on human health.

- 3.3.5 While the structure of the ES remains for the Applicant to decide, the information that would be expected to appear in a Transport chapter must be provided in the ES. The ES must demonstrate where the information gathered as part of the traffic assessment has been applied to other assessments within the ES. The absence of a Transport chapter, supported by a Transport Assessment, has been noted by Essex County Council (ECC), the London Borough of Havering (LBH), and Thurrock Council (TC). The Inspectorate considers that these concerns should be addressed.
- 3.3.6 The Inspectorate has received particularly detailed consultation responses from the Environment Agency (EA), Historic England (HiE), Natural England (NE), the PLA, and several local planning authorities regarding the Applicant's proposed scope to the assessment. The Inspectorate's comments in Section 4 of this Opinion identify those matters deemed to be of particular relevance to the scope of each assessment and where necessary these comments incorporate advice provided by consultees. However, as stated in paragraph 1.2.3 above the ES submitted by the Applicant should demonstrate consideration of the points raised by the consultation bodies.

Baseline Scenario

- 3.3.7 The ES should include a description of the baseline scenario with and without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.
- 3.3.8 The Inspectorate notes the information in Section 5.8 which sets out the assessment scenarios in this regard, and advises that it is content with this approach to be carried forward into the ES.

Forecasting methods or evidence

- 3.3.9 The ES should contain the timescales upon which the surveys which underpin the technical assessments have been based. For clarity, this information should be provided either in the introductory chapters of the ES (with confirmation that these timescales apply to all chapters), or in each aspect chapter.
- 3.3.10 The Inspectorate expects the ES to include a chapter setting out the overarching methodology for the EIA, which clearly states which effects are 'significant' and 'non-significant' for the purposes of the EIA. Any departure from that methodology should be described in individual aspect assessment chapters.

- 3.3.11 The ES should include details of difficulties (for example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.
- 3.3.12 The traffic modelling applied to the assessment is likely to have implications for the design of the Proposed Development, and subsequently the basis for the assessments in the ES. The Applicant should seek to agree the approach to the traffic modelling with the relevant statutory consultees. Transport for London (TfL) have provided specific comments on the approach and methodology applied to the traffic model and the scope of the assessment of traffic effects. The Applicant should ensure that the scope and methodology are fully explained in the ES.

Residues and emissions

- 3.3.13 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 relevant aspect assessments.
- 3.3.14 Paragraph 5.5.3 of the Scoping Report states that an assessment of heat and radiation has been scoped out of the EIA, as it is considered not to be relevant to the Proposed Development. The Inspectorate has taken into account the nature and characteristics of the Proposed Development and agrees significant effects resulting from heat and radiation are unlikely to arise and therefore agrees that this aspect may be scoped out.

Mitigation

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

Vulnerability of the development to risks of major accidents and/or disasters

- 3.3.16 The ES should include a description of the potential vulnerability of the Proposed Development to risks of major accidents and/or disasters, including the vulnerability to climate change, which are relevant to the Proposed Development. Relevant information available and obtained through risk assessments pursuant to European Union legislation such as Directive 2012/18/EU of the European Parliament and of the Council or Council Directive 2009/71/Euratom or relevant assessments carried out pursuant to national legislation may be used for this purpose provided

that the requirements of this Directive are met. Where appropriate, this description should include measures envisaged to prevent or mitigate the significant adverse effects of such events on the environment and details of the preparedness for and proposed response to such emergencies.

- 3.3.17 The Inspectorate notes from Chapter 17 that it is not proposed to provide a separate chapter in the ES on major accidents and disasters, but that the requirements of the 2017 EIA Regulations will be reflected. Paragraph 5.5.3 states that the potential effects on receptors resulting from major events will be reported in relevant chapters. It is noted that there is also a commitment to assess the vulnerability of the Proposed Development to major accidents and disasters. The ES should also assess major accidents and disasters that may occur as a consequence of the Proposed Development.

Transboundary effects

- 3.3.18 Schedule 4 part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an ES. The Inspectorate notes that the Applicant has indicated in Chapter 18 of the Scoping Report by way of a Transboundary Effects Screening Matrix that the Proposed Development at the current design stage is not likely to have significant impacts on another European Economic Area (EEA) State.
- 3.3.19 Regulation 32 of the EIA Regulations inter alia requires the Inspectorate to publicise a DCO application on behalf of the SoS if it is of the view that the proposal is likely to have significant effects on the environment of another EEA state, and where relevant, to consult with the EEA state affected.
- 3.3.20 The Inspectorate considers that where Regulation 32 applies, this is likely to have implications for the examination of a DCO application. The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary impacts and if so, what these are and which EEA States would be affected.

A reference list

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

3.4 Confidential Information

- 3.4.1 In some circumstances it will be appropriate for information to be kept confidential. In particular, this may relate to information about the presence and locations of rare or sensitive species such as badgers, rare birds and plants where disturbance, damage, persecution or commercial exploitation may result from publication of the information. Where documents are intended to remain confidential the Applicant should

provide these as separate paper and electronic documents with their confidential nature clearly indicated in the title, and watermarked as such on each page. The information should not be incorporated within other documents that are intended for publication or which the Inspectorate would be required to disclose under the Environmental Information Regulations 2014.

4. ASPECT BASED SCOPING TABLES

4.1 Air Quality

(Scoping Report Chapter 6)

The study area for the local air quality assessment is defined using the traffic change-based criteria defined in the Design Manual for Roads and Bridges (DMRB). Roads that meet the criteria are defined as 'affected roads', all of which together comprise the Affected Road Network (ARN). The study area will include sensitive receptors located within 200m of these roads.

Potential effects on local air quality resulting from both the construction and operation of the Project would be assessed in accordance with the guidance outlined in DMRB HA207/07 Volume 11, Section 3, Part 1; associated Interim Advice Notes (IANs) and Defra's Local Air Quality Management Technical Guidance (LAQM.TG (16)). As required by the DMRB, the air quality assessment will be based on the most likely traffic flows.

The air quality assessment considers the impacts on both Air Quality Strategy Objectives and EU Limit Values. The Applicant identifies that the proposed development has potential to give rise to air quality effects during construction and operation, including those on designated nature conservation sites in the locality.

Specific mitigation measures are not set out within the scoping report. The Applicant should set out within the ES the proposed measures to minimise emissions from construction and operational activities.

The Applicant is not specifically proposing to scope any matters out from the air quality assessment.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	6.10.1	N/A	States that no matters will be scoped out.
1	6.6.4	Assessment of effects	The scoping report states that PM _{2.5} is not currently assessed and reported as part of the DMRB HA207/07 air quality assessment. The Inspectorate considers that the ES should include an assessment of impacts associated with increased PM _{2.5} resulting from the Proposed Development. In determining significance the assessment should take into account performance against relevant target/limit values. Gravesham Borough Council (GBC) and TC in their responses also highlight the need to

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			consider PM _{2.5} in the assessment.
	Para	Other points	Inspectorate's comments
2	6.5.1	Baseline information	An NO ₂ diffusion tube monitoring survey is being undertaken for a 12-month period at locations representative of public exposure. The surveys should be in accordance with the most relevant Defra guidance relating to diffusion tube monitoring. The dates of these surveys, together with the locations and justification of why the locations were selected should be included within the ES. In their responses, GBC and Shorne Parish Council (SPC) make recommendations regarding air quality monitoring locations. In addition, TC state that they hold data from NO ₂ diffusion tube surveys. The Applicant should make effort to agree monitoring locations and the data used in the assessment with consultees.
3	6.5.1	Baseline information	Monitoring is being undertaken close to ecological sites to inform the baseline and model verification to support the calculations of nitrogen deposition and NO _x concentrations for comparison against the appropriate air quality standards. Dates of monitoring together with the locations and justification of the monitoring locations should be included within the ES.
4	6.6.5	Effects on ecological receptors	The ES should clearly identify those designated sites which may be impacted by changes in air quality, identifying those sites where the critical loads may be exceeded. The Inspectorate considers that there is a need to assess whether significant effects could arise on other sensitive nature conservation sites. The sites to be assessed should be established through consultation with the relevant statutory consultees. NE provide advice in their response on the scope of the air quality assessment with respect to determining significant effects on designated nature conservation sites. They also recommend that the assessment should include potential air quality effects on other sensitive ecological receptors, for example ancient woodland.
5	6.7.5	Methodology	GBC have provided detailed comments and advice regarding the methodology and approach to the Air Quality assessment, including reference to guidance used for

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			analysis. The Inspectorate considers that this advice should be taken into account in the ES, where appropriate.
6	Section 6.9	Mitigation of construction and operation	General methods of mitigation are set out in the scoping report; however the ES should describe and justify any specific mitigation measures designed to address significant adverse effects. The ES should report predicted residual effects following mitigation.

4.2 Cultural Heritage

(Scoping Report Chapter 7)

The study area is described in the Scoping Report as extending to 1km from the proposed boundary for both designated and non-designated assets. Paragraph 7.7.6 (last bullet point) makes reference to setting a Zone of Visual Influence (ZVI) in consultation with the landscape architect team involved in the EIA. The ZVI is not defined at this stage.

The methodology proposed is based on DMRB HA208/07, along with industry guidance, listed in paragraph 7.7.2, including publications from HiE and the Chartered Institute for Archaeologists. Under the DMRB methodology, a detailed assessment is proposed, to include desk-based assessment and site based evaluation. The role of professional judgement in this determination is explained in the Scoping Report.

The Scoping Report provides information about how potential effects will be described. No specific effects are detailed at this stage; however potential effects are identified in general terms for both the construction and operational phases of the Proposed Development. An outline mitigation strategy is described in Section 7.9 of the Scoping Report, although embedded mitigation measures which could form part of the Proposed Development design are described in paragraph 7.8.4.

The Applicant has not identified any matters as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	N/A	None identified	N/A
ID	Para	Other points	Inspectorate's comments
1		Study area	It is noted that the ZVI is yet to be determined, however with respect to the study area the Inspectorate would expect this to be determined by the likely extent of impacts. The distance of 1km from the proposed boundary is not justified in the Scoping Report, and the Applicant should ensure that the study area applied is adequate and justified in the ES.
2	Table 7-2	Baseline information	The baseline assessment in the ES should be established using all relevant data. HiE's response highlights additional sources of information relevant to the baseline assessment which should be taken into account. Kent County Council (KCC) have also provided advice regarding historical mapping and LIDAR data

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			which should be utilised where relevant.
3	7.6.7	Receptors	The assessment in the ES should assess impacts to all relevant cultural heritage receptors, and agreement should be sought from consultees on which receptors to include. HiE identify a number of receptors where impacts may occur eg North Ockenden conservation area and associated listed heritage assets. The Inspectorate considers that impacts to these receptors should be assessed within the ES. SPC have also provided information relating cultural heritage assets.
4	7.7.8	Surveys	The Inspectorate considers that the location and need for surveys necessary to inform the assessment in the ES should be discussed and agreed with relevant consultees. The Inspectorate notes that HiE has in its response provided advice on the approach archaeological evaluation.
5	7.7.21	Limitations and assumptions	The Scoping Report states that the magnitude of impact can be difficult to predict given the nature of archaeological deposits. The ES should contain a section on the limitations which apply to the assessment and any assumptions made, with a clear explanation as to the implications for the interpretation of the assessment.
6	7.9	Mitigation	The ES must clearly describe the mitigation measures which form part of the Proposed Development design and those which are designed to address the significant effects. The ES must set out to what degree the measures will be effective and how they are/will be secured in the DCO.
7	General	Inter-relationships	The ES should include an assessment of inter-relationships between aspects including those which would have an influence on the historic environment. For example Chapter 7 Biodiversity, Chapter 8 Landscape and Visual Assessment, Chapter 10 Geology and Soils and Chapter 14 Road Drainage and Water Environment.
8	2.12.3	Slurry TBM	If a slurry Tunnel Boring Machine (TBM) is used to construct the tunnel, the ES should assess the impacts which would occur if there was a slurry breakout. The assessment should address the specific concerns of HiE in this regard.

4.3 Landscape

(Scoping Report Chapter 8)

The Scoping Report identifies that the EIA will consider both landscape and visual effects. The study area for the landscape assessment has been designed to follow the criteria in IAN 135/10. The study area for the visual amenity assessment is described as including the area from which the Proposed Development can be seen. The Scoping Report then sets a study area of 2km either side of 'the application boundary' for the assessment of landscape, townscape and visual amenity. Paragraphs 8.7.9 to 8.7.11 set out the timescales applied to the assessment including the consideration of future baseline.

Section 8.7 describes the methodology to be applied with reference to the DMRB and applicable IANs in particular IAN 135/10, and to standard industry guidance in the form of IEMA and the Landscape Institute's guidance. In addition, reference is made to the Institution of Lighting Engineers 'Guidance Notes on the Reduction of Obtrusive Light' with respect to light pollution effects. The methodology for determining significance is also set out in the Scoping Report.

Effects are to be considered during the construction phase assuming a maximum activity situation for any given view, and for the operational phase for the winter of opening and the summer of the fifteenth year after opening. Key potential effects identified are landscape effects on sensitive landscapes including Kent Downs AONB and land identified as green belt. Sensitive visual receptors along the scheme which could be subject to adverse effects include residents, users of cycle routes, visitors to heritage assets and recreational facilities, and the Public Right of Way (PRoW) network.

A general strategy for mitigation during construction is presented, with reference to the use of a Construction Environmental Management Plan (CEMP), to include careful siting of compounds and tall structures (for example batching plants) and retention of mature vegetation. The use of hoarding and sensitive lighting is also mentioned. Operation phase mitigation is also described in general terms.

The Applicant has not identified any matters as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	N/A	None identified	N/A
	Para	Other points	Inspectorate's comments
1	8.4.4	Receptors	The Inspectorate considers that the ES should also assess impacts to views to and from Tilbury Fort which is a sensitive receptor on the north side of the River Thames. Views to and from the

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			Kent Downs AONB will also require thorough consideration. The Applicant should have regard to comments by Sevenoaks District Council (SDC) in their response in relation to the traffic assessment and impacts on roads within the AONB.
2	8.7.8	Study area for visual amenity	<p>The Scoping Report implies that 2km either side of the application boundary equates to the whole of the area from which the Proposed Development could be visible. It is not clear how this has been justified or how this may be refined upon determination of the ZVI. The visual assessment study area and the landscape effects study area must be adequate to establish the likely impacts of the Proposed Development.</p> <p>Comments have been received from ECC, GBC, and TC regarding the study area to be applied. The Applicant should make effort to agree the study area with consultees.</p>
3	8.7.9	Assessment Periods/Scenarios	This paragraph estimates construction of 6 years duration; however the description in Chapter 2 states that overall construction will be approximately 5 years. The ES should include a clear and consistent description of the construction phase and the assumptions used to inform the assessments including the anticipated duration of construction works. The construction work duration used in the assessment should be an accurate representation of the works required.
4	8.8.1	Description of effects	Chapter 5 states that the terms 'short-term', and 'long-term' are defined differently depending on the environmental aspect chapter. However, these terms are not defined in the Scoping Report. The ES should include an explanation of any such terms and other similar terms which influence the assessment approach, for example 'medium term'.
5	8.9.2	Mitigation (operational phase)	If mitigation is relied upon in the ES it should be clear how this is secured, including any commitment to returning land to agriculture. The means by which land management in the operational phase is to be secured must also be explained, for example whether an area is to be retained within the highways estate or returned to management by other landowners.

4.4 Biodiversity

(Scoping Report Chapter 9)

The study areas to be applied for the assessment of effects on ecological features are varied depending on the nature of the feature in question. The study areas are described in Table 9-1 (terrestrial) and 9-2 (marine) which list all potential surveys to be carried out.

Survey and assessment methodologies are described (with detail provided in Appendix 3) and reference is made to a number of guidance and professional standards including the Phase 1 Handbook (JNCC), CIEEM EcIA Guidelines (2016), DMRB Vol 11 Section 3 Part 4 and IAN 130/10.

The assessment period is discussed in paragraphs 9.7.15 to 9.7.18, and reference is made to the future baseline, which is set at 2026 (opening year). The method applied to the determination of significance of effects is explained and follows the CIEEM guidance.

Potential effects are described for both the construction and operational phases. Tables 9-8 and 9-9 outline the potential for these to occur for all the ecological features scoped in to the assessment.

Construction and operation effects on marine ecology are discussed separately. Again, Table 9-10 illustrates the likelihood of these occurring for each feature considered. The Scoping Report states that adverse operational effects on the marine environment are not foreseeable based on any proposed new jetty structures provided to facilitate construction of the Proposed Development being no longer in use, and the additional boat traffic associated with the Proposed Development construction period having ceased.

Mitigation measures are discussed in general terms, with reference to avoidance of impacts through scheme design.

The Applicant does not specifically identify any matters proposed to be scoped out of the EIA, however, matters excluded are included below.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	N/A	None identified	N/A
	Para	Other points	Inspectorate's comments
1	9.1.5	Interrelationships	The ES should assess inter-related impacts to biodiversity including those that occur from changes to landscape and hydrology. The ES should specifically address the points raised by the EA relating to the impacts associated with the proposed drainage design and designated sites.

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2	9.4.18	Survey timing and review	The Inspectorate notes that bird surveys designed to support the HRA are ongoing until March 2019 (refer to Table 9.1 and Appendix C). Paragraph 9.5.6 states that the intended application submission date as 2019. The Inspectorate considers that survey work necessary to inform the assessment must be completed prior to submission of the application.
3	Table 9.1	Impacts on barn owl	The table does not mention surveys for barn owl to confirm presence/absence within the study area. The Inspectorate considers that these should be included and if impacts such as habitat loss during construction and collision risk during the operational phase are likely to occur these should be assessed in the ES.
4	9.7.5	Study area	The abbreviation 'ZoI' is used here for the first time. The ES should explain this term: and in describing the study area(s) for the assessment, define the Zone of Influence applied.
5	9.7.8	Study area	This paragraph states the 'application boundary plus a 500m buffer' as the Phase 1 survey area, Table 9-1 gives it as the application boundary plus 50m. It is noted that Figure 9.4 shows this as 500m. The ES must ensure that the survey area is appropriately wide to identify and assess all likely significant effects and is accurately described.
6	Figure 9.4	Impacts of marine works	The Inspectorate is not content from the information in the Scoping Report that the marine survey areas shown on this figure are adequate to assess the impacts of the Proposed Development. The areas shown do not appear to correspond with the location of the proposed potential jetty. The impacts of the estuarine/marine elements of the Proposed Development must be assessed in the ES, and the information on which the assessment is based provided.
7	Table 9-2	Surveys	The Inspectorate recommends the Applicant provides a robust assessment of the effects of underwater noise, and highlights comments provided by the Marine Management Organisation (MMO) regarding this matter and the approach to the assessment. Survey approach must be agreed as far as possible with consultees. The PLA recommend discussion of surveys with the EA and Cefas and the Inspectorate supports this recommendation. Sampling and surveys to inform works which will

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			<p>require a Marine License, such as works associated with a new jetty, should be agreed with the MMO.</p> <p>Detailed technical comments have been provided by the EA, PLA and the MMO regarding proposed surveys, including the approach to aquatic invertebrate sampling, and otter and water vole surveys. NE also provide advice on the scope of the marine surveys (to inform the effects of the proposed jetty works) and the methodology for determining potential receptors.</p>
8	Table 9-9	Potential effects	<p>In the text 'barrier effects' is identified (paragraph 9.8.15) but this is not featured as a heading in the table, instead 'noise disturbance' appears in the table but not in the list of potential effects. The ES must be clear as to which effects have been assessed and how, and must assess all matters which could give rise to significant effects.</p>
9	Table 9-9	Potential effects	<p>The ES should assess impacts to aquatic invertebrates to be affected by noise disturbance including cumulative underwater noise. The Applicant should discuss and agree the extent of the assessment with the MMO.</p>
10	9.8.17 – 9.8.23	Potential effects	<p>Following on from above, barrier effects are not discussed in these paragraphs, however, noise disturbance effects are. The ES must assess all matters which could give rise to significant effects and in absence of further explanation the Inspectorate considers this should include barrier effects.</p>
11	9.8.29	Operational effects on the marine environment	<p>Whilst not stated as being scoped out, the Inspectorate is unclear as to the assumptions made which lead to these effects not being anticipated. In particular, the ES must clearly explain if any jetty (or other relevant structures) will be constructed, removed or retained, and show how any associated impacts (such as those from demolition) have been assessed.</p>
12		Impacts from drainage	<p>The ecological impacts of highways drainage discharges to the surface water environment should be assessed. Any ditch or watercourse which could receive or be impacted by the drainage design should be assessed. Particular attention must be paid to features with hydrological linkages to the Thames Estuary and Marshes Ramsar site. Comments have been provided by the EA in their response regarding</p>

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			these matters.
13		Impacts on designated and sensitive sites	The assessment should be based on up to date information regarding designated sites including local sites of nature conservation value. NE have provided information on the separation of the former Thames Estuary recommended Marine Conservation Zone (MCZ) into two distinct sites and their ecological features. LBH and TC both provide information on locally important sites for nature conservation which should be taken into account in the ES.

4.5 Geology and Soils

(Scoping Report Chapter 10)

The study area for this aspect is set out in the Scoping Report as the application boundary plus a 250m buffer zone. The study area has been proposed to allow for surrounding geological and environmental features in order to assess potential significant effects. The study area for effects on soils comprises the application site but is extended to include affected farm enterprises (see section 10.7.4-10.7.6 for a full description of the study area).

The assessment proposes to use guidance from CLR11, CIRIA C552, DMRB (vol. 11) along with professional judgment to determine significant effects on geology and soils. A full description of the significance criteria is given in Table 10-6, Table 10-7 and Table 10-8. The criteria used to determine the magnitude of the effects on soils are to be based on DMRB Vol.11 and professional judgment. A full description is given in Table-10-9, Table 10-10 and Table 10-11.

Potential impacts are set in terms of construction and operational affects. The potential impacts during construction include; loss of geological resources, land contamination, disturbance of contaminated land, creation of new contamination pathways, permanent loss of agricultural land, (especially Best and Most Versatile Land, BMVL) and the disturbance and potential explosion of Unexploded Ordinance (UXO).

Potential Impacts during operation include; contamination due to fuel spillages, impacts to human health due to the release of landfill gases, and settlement due to ground movement.

The Applicant has not identified any matters as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	N/A	None identified	N/A
	Para	Other points	Inspectorate's comments
1	10.4.53	Baseline	The Landmark Envirocheck database version 2005 has been used for data on man-made cavities. The Inspectorate notes that this database is now 12 years old. The ES should be based on more up to date data where such data exists.

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2	10.4.64	Baseline	<p>The Scoping Report states that 'some information on the soils and land quality is available from published sources'; this should be expanded in the ES to provide a comprehensive understanding of the soil and land quality baseline.</p> <p>GBC and LBH have provided information regarding the local geology, with reference to experience during construction of High Speed 1 (HS1), which may have implications for the Proposed Development design and therefore the basis for the assessment of impacts which could arise. The assessment in the ES should take this into account.</p>
3	10.7.5	Study Area	<p>The Inspectorate notes that the 'surrounding geological environment' and 'distance over which significant effects can be reasonably thought to have the potential to occur' have no clear definition in the Scoping Report. A full description and justification of the study area must be provided within the ES.</p>
4	10.7.6 And 10.85	Study area for soils	<p>The Inspectorate notes that the study area for impacts on soils is limited to the application site and affected farm enterprises. The ES should ensure that an appropriate study area is established and justified taking into account the extent of the likely impacts including those relating to run-off of contaminated land.</p>
5	N/A	Economic minerals	<p>The ES should assess any likely impacts to mineral reserves from the Proposed Development. KCC and LBH have also provided comments regarding the need to safeguard economic minerals which should be taken into account in relevant aspect chapters.</p>

4.6 Materials

(Scoping Report Chapter 11)

A specific study area for material resources has not been identified. For the waste assessment, the study area comprises of the application boundary and for Construction, Demolition and Extraction (CD&E) waste, the study area is Kent and Greater Essex. For hazardous waste arisings, the study used is the South-East. See section 11.7, paragraphs 11.7.2-11.7.5 for a full description of the study area.

The methodology did not use any guidance and only professional judgement has been used. The assessment of the materials value/sensitivity and the criteria for each value/sensitivity is set out in Table 11-6. An assessment on how the usage of materials will affect the local material markets based on the future baseline figures as set out in section 11.7.8-11.7.10. Furthermore, the affects CD&E waste products will have on the landfill sites within the study will be assessed against the future baseline set out in sections 11.7.11-11.7.17.

Potential impacts during construction and operation include the depletion of finite natural resources, the environmental effects of producing, transporting and processing waste, and the reduction in landfill capacity. See section 11.8 for a full description of potential impacts.

The Applicant does not specifically identify any matters proposed to be scoped out of the EIA, however, matters excluded are included below.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
1	11.1.3	Offsite manufacture and extraction	The Inspectorate agrees that this can be excluded from the scope due to the large amount of variables involved in the manufacturing of products and processing of extracted primary materials.
	Para	Other points	Inspectorate's comments
2	Table 11-4, 11-5, and 11-7	Baseline	It is noted that these tables have no units of measurement. The Inspectorate requests that units of measurement are included in all tables (where relevant) in the ES to improve the overall clarity.
3	11.4.24	Waste Capacity	The Scoping Report states that the assessment will include consideration of total capacity of landfills within 20km of the Proposed Development. The method used to determine this as an appropriate distance from the Proposed Development is not described. The ES should

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			include a clear description of the methods used to determine the assessment. A justification should be included to support decisions made such as the use of a 20km search area for landfill capacity.
4	11.6.1	Key Environmental Receptors	The Scoping Report states that the ES will include a quantification of the typical key material resources required for the Proposed Development. The ES should include a clear explanation as to how it has been taken into account the assessments.
5	11.6.2	Key Environmental Receptors	The Inspectorate requests that when the Applicant refers to distances in the ES, specific and justifiable distances are used to increase clarity as the term 'reasonable proximity' can be misinterpreted.
6	11.7.8-11.7.16	Future Baseline	The Scoping Report states different years in regard to the future baseline. The Applicant should clearly state and justify the year used for the future baseline and show consistency within ES when referring to the future baseline.
7	General		The ES should assess the need for an availability of mineral reserves. KCC and ECC have both commented on the approach to assessing impacts to mineral reserves. To support this assessment both ECC and TC have also provided an indication of the likely location for baseline information.

4.7 Noise and Vibration

(Scoping Report Chapter 12)

The study area for construction noise is based upon a distance of 300m from the boundary of the Proposed Development. Impacts from rail noise will be assessed to a distance of 300m from loading facilities and sidings which may be used during construction. Airborne traffic induced vibration will be assessed at all residential receptors within 40m of the Proposed Development as specified within the methodology presented in the DMRB.

The operational road traffic noise study area will be derived in accordance with the requirements of DMRB Volume 11 Section 3 Part 7 HD213/11 'Noise and Vibration' Detailed Assessment Methodology (HD213/11). A 'detailed' assessment will be carried out regarding impacts from operational traffic noise, due to the size and nature of the proposed development. The scoping report sets out the relevant British Standards used to assess construction noise. Impacts from rail noise will be carried out in accordance with Calculation of Rail Noise (CRN) methodology. Tunnel ventilation static plant noise will be assessed at selected sensitive receptors to be agreed through consultation. Reference is made to relevant British Standards and impacts from the TBM will be considered based on criteria used on other major tunnelling projects.

The Applicant identifies the following impacts during construction: noise from the operation of construction plant; noise from HGV movements to and from the site, increase in noise levels in the vicinity of rail lines and/or barge loading areas should spoil be removed via these modes of transport; and noise and vibration from piling activities.

During operation the following impacts are identified: changes in road traffic noise levels at sensitive receptors; noise level changes due to changes in vehicle flow, speed and composition on the existing road network; and noise impacts from the tunnel ventilation system.

The Inspectorate has provided comments on matters that the Applicant has set out as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
1	12.10.3	Ground borne traffic vibration	The scoping report states that impacts from ground borne traffic vibration will not be assessed based on advice in DMRB HD213/11. The Inspectorate has considered the nature of the proposals (which include significant junction works involving existing roads and the introduction of new carriageways and a 3.5km tunnel), and the receiving environment where a number of settlements and sensitive

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			sites exist on and adjacent to the proposed alignment. Combined with the limited evidence provided in the Scoping Report, the Inspectorate considers that significant effects cannot be ruled out at this stage. Therefore construction and operational ground borne vibration should be assessed as part of the ES.
	Para	Other points	Inspectorate's comments
2	12.5.2	Identification of receptors	The ES will need to provide a full detailed description of sensitive receptors within the area affected by the Proposed Development, whilst avoiding duplication of baseline information between chapters where possible.
3	12.5.4	Locations for short term and longer term monitoring.	The ES should provide details of the position and duration of noise monitoring equipment. The Inspectorate notes that GBC have provided comments on monitoring locations and information on emerging monitoring data. The locations used for the assessment should be agreed with relevant consultees where possible.
4	12.7.5	Identification of sensitive receptors	Sensitive receptors within the 300m study area for assessment of construction noise are proposed to be identified in conjunction with relevant local authorities. This should be reported in the ES, and the use of a figure to illustrate where receptors are located would be a helpful inclusion.
5	12.7.7	Impacts from barge loading	Receptors which are identified as sensitive to the impacts of barge loading should be represented in the ES. A figure would be a helpful inclusion within the ES. The Applicant is referred to the comments from the PLA which indicate the possibility of larger vessels being used. The Inspectorate considers that if any other vessels are proposed to be used the impacts associated should be assessed in the ES.
6	12.7.20	Impacts from TBM	As there are currently no UK standards for impacts for when ground borne noise becomes significant, the assessment for London Thames Crossing will be based on criteria used for other major tunnelling projects such as the Silvertown Tunnel. The methodology used should be fully documented in the ES.
7	12.8.4	TBM operations	The TBM will be in operation 7 days a week, 24 hours a day, the noise impacts from this

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			continual use should be fully assessed.
8	12.9.5	Mitigation measures	Noise barriers have been listed as potential mitigation measures to be used to reduce effects from noise. The effectiveness of noise barriers should be fully described and assessed. Any inter-relationships with other chapters such as the Landscape and Visual assessment or Ecology should also be considered. Details must be provided of how the mitigation design will be secured.

4.8 People and Communities

(Scoping Report Chapter 13)

The spatial scope to be applied to assessments in this aspect is described in Tables 13-4 of the Scoping Report. The table depicts a wider study area in relation to socio-economic effects, which is described in terms of local authority areas. The study area for effects on assets and non-motorised routes is described as the 'application site' plus a 200m buffer. The temporal scope for construction effects is given as 5 years, the estimated duration of construction, whilst acknowledging that the construction is likely to be phased. The use of a future baseline for the assessment of operational effects is explained.

The Scoping Report refers to the approach set out in the DMRB, in particular: Volume 11 Section 3 Part 6 'Land Use; Part 8 'Pedestrians, Cyclists and Equestrians and Community Effects'; Part 9 'Vehicle Travellers'; and IAN 125/25. With respect to wider socio-economic effects reference is made to guidance from the Homes and Communities Agency. Sensitivity criteria for community and private assets, and development land are set out in Table 13-3. Reference is made to the use of professional judgement to set criteria for severance effects and changes in amenity.

Potential significant effects are described in Section 13.9, for both the construction and operational phases. Construction effects on assets are predicted from demolition, land-take, and severance to access. Disruption to other development land is also predicted. Changes to amenity and disruption to non-motorised routes is predicted. Wider socio-economic effects are predicted during construction and operation. Operational phase effects identified include those associated with increased noise and reduced air quality (ie reduced amenity) and changes to travellers' views.

Mitigation measures are outlined in Section 13.9 with reference of the use of a CEMP to minimise construction effects and to sensitive design. A commitment is made in the Scoping Report to prepare detailed mitigation for effects on commercial and residential properties.

The Inspectorate has provided comments on matters that the Applicant has set out as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
1	13.7.3	Decommissioning	Notwithstanding comments made at paragraph 2.3.7 of this Opinion the Inspectorate is content to scope this matter out of the assessment of impacts to people and communities in the ES.
	Para	Other points	Inspectorate's comments
2	2.12.5	Transportation of excavated material	The Scoping Report identifies road, river or rail as being options for transporting

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			excavated material. The ES should clearly set out the assumptions that have been made within the assessment of transportation impacts. A worst case scenario should be assessed. Where transportation by river or rail is relied upon to mitigate road transportation impacts (as implied in paragraph 6.9.4 of the Scoping Report), the Inspectorate would expect to see commitments made to these movements eg through the draft DCO. The Applicant should also have regard to the points raised by PLA on this matter.
3	13.1.3 & 13.8.3	Impacts on navigation	The Scoping Report identifies the potential for impacts on navigation from the construction and use of a jetty, however the methodology in section 13.7 does not propose to assess such impacts. The Inspectorate considers that impacts on navigation for both commercial and recreational craft should be assessed within the ES. Risk mitigation methods should also be identified.
4	13.4.8,	Marine environment - baseline	The Applicant should ensure that the ES accurately reflects the existing infrastructure and the activities that take place within the River Thames and is directed to the comments of the PLA in this regard.
5	None	Study area and baseline	The Inspectorate considers that the provision for construction workers accommodation and facilities should be assessed, and that significant effects may extend into a wide geographical area. Dartford Borough Council (DBC) have provided comment in this regards, and express concerns that consideration of potential impacts should be expanded across the wider North Kent area. ECC also provide comments on the study area applied to the assessment in their response.
6	13.5 and 13.7	Baseline and Methodology	Table 13-4 mentions local roads being included in the study area, and paragraph 13.5.1 mentions data from traffic models being used to establish the baseline. Assumptions regarding future traffic conditions are also mentioned in paragraph 13.7.27. However, very little detail is supplied as to how traffic modelling data will be applied to the assessments in this chapter of the ES, and how much of the assessment will be based on qualitative criteria. This

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			should be fully demonstrated in the ES.
7	13.7.5	Methodology	This paragraph does not mention residential assets in the discussion of private assets that may be affected, although earlier in the Scoping Report these are identified as relevant. The Inspectorate considers that residential assets should be included in this assessment and are relevant to the assessment of private assets. The ES should address this and the methodology applied must be explained.
8	13.7.14 and 13.7.15	Methodology – assessment criteria	The methodology and criteria applied to the assessment must be explained and justified in the ES. Paragraph 13.7.14 makes reference to the criteria to be applied in the assessment of severance effects, and to Table 13-5. However, these criteria are not presented in the Scoping Report (Table 13-5 lists the numbers of different types of non-motorised routes likely to be severed). Paragraph 13.7.15 makes reference to the criteria to be applied in the assessment of changes in amenity, and to Table 13-6. These criteria are not presented in the Scoping Report (there is no Table 13-6 presented).
6	13.8 and 13.9.11	Construction effects and mitigation	The ES should clearly describe how design, construction phasing, multiple construction crews, and traffic management measures are expected to affect local roads, amenities, and non-motorised routes. A number of consultees have provided information which should be taken into account within this assessment. For example KCC provide advice on important non-motorised user routes in the vicinity of Gravesend, and considerations in relation to the proposed England Coast Path national trail due to be in place by 2020. NE provide additional comment regarding this national trail from a design perspective. KCC also address the need to assess severance of non-motorised routes in their response, as well as impacts on minor local roads in particular during construction. TC express concerns regarding impacts to PRow and include reference to the England Coast

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			Path in their response.
7	13.8.16	Operational effects	<p>It will be important to explain in the ES the significance of air quality and noise effects in relation to amenity, with appropriate cross-reference to the relevant aspect chapters. The Inspectorate notes that Medway Council (MC) have provided information on the predicted growth in Medway and the emerging development strategy, with respect to the Lower Thames Area Model for traffic modelling proposed in the Scoping Report. This information is also likely to be relevant to the Air Quality and Noise assessments. ECC have also provided advice regarding growth on the A127 corridor and emerging Local Plans. The assessment in the ES should take this information and any other relevant information of this sort into account.</p>
8	13.9.4	Potential effects and mitigation	<p>The Inspectorate considers that effects on amenity will also result from changes to traffic conditions, both during construction and operation. The ES should assess this matter and explain how traffic modelling data will be applied to the assessment.</p> <p>In undertaking this assessment, the detailed comments from ECC regarding the assessment of community effects, in particular economic effects, should be taken into account.</p>

4.9 Road Drainage and Water Environment

(Scoping Report Chapter 14)

The Study Area for surface water is defined in section 14.7.3 and constitutes the area within the Proposed Development red line boundary as well as downstream reaches of the River Thames and the River Mardyke and any other surface water within 500m of the Proposed Development. The ground water Study Area is defined in section 14.7.6 as any receptor or resource within 3km of the Proposed Development.

The Methodology is based on guidance from DMRB Volume 11, Part 10 HD45/09, the EA 2017 guidance on preventing ground water pollution, and various CIRIA publications as stated in section 14.7.6. The assessment of the magnitude and significance impacts will be based upon criteria set out in the DMRB-HD45/09 in sections 14.7.11-14.7.14 and Table 14-3.

Potential Impacts during construction identified in the Scoping Report include: the contamination of ground and surface waters, a decrease in local water levels, and changes to the geomorphology and hydrodynamics of the area.

Potential impacts during operation identified include: increased flood risk, adverse effects to ground water, adverse effects to water quality, and impacts to human health due to increased pollution.

No matters have been proposed to be scoped out of the assessment.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
	N/A	None identified	N/A
ID	Para	Other points	Inspectorate's comments
1	14.5.1	Baseline information	The Scoping Report states that 'limited' field testing to record abiotic water quality data on the surface waterbodies is proposed. The Inspectorate advises that the Applicant undertakes sufficient field tests to enable the understanding of the interactions between surface water and groundwater, as these tests will inform the assessment of effects on designated sites including the Thames Estuary and Marshes Ramsar site. The results of all field tests undertaken should be included in the ES.
2	14.7.3	Study area	The Applicant has stated that the 'downstream reaches' of the river Thames and Mardyke will be included in the study area. The Inspectorate requests that the study area is clearly defined in the ES, with the use of figures as necessary.

Scoping Opinion for
Proposed Lower Thames Crossing

3	14.7.4	Groundwater receptors	The ES should assess all relevant groundwater receptors including those that would result in direct/indirect discharge to the Thames. The Applicant should discuss and agree the approach to this assessment with the MMO.
4	n/a	Marine processes	The ES should include assessment of impacts to marine processes and the implications for ecological receptors. The extent and approach to the assessment should be discussed and agreed with relevant statutory consultees.
5	General	Flood defences, drainage, watercourse impacts	The ES should assess impacts to existing flood defences including those that may result from vibration during construction. The Applicant should agree the approach the assessment with the EA and any other relevant consultees.
6	General	Sources of flooding	The Inspectorate considers the potential for existing infrastructure to contribute to flooding should be included in the assessment, where significant effects could occur. It is noted that Anglian Water have commented on the need to consider sewer flooding when assessing sources of flooding and flood risk.

4.10 Climate

(Scoping Report Chapter 15)

The study area for the assessment of climate change adaption comprises the South East of England (see section 15.7.3). The study area in relation to Green House Gas (GHG) emissions would comprise the application boundary and the traffic model area (see section 15.7.3 and Plate 2-1)

For both elements data collection has been undertaken utilising a range of desk study sources and following the overarching guidance from the Climate change Act 2008. For climate change adaption, the UKCP09 data provides the predicted climate conditions and a qualitative assessment methodology as shown in Table 15-4 is proposed to be used.

A range of sources have been used with respect to the GHG emissions assessment and a full list can be found in section 15.7.2. The GHG emissions will be assessed by undertaking a qualitative desk study with further quantitative study is proposed to be undertaken to inform the assessment.

The Proposed Development will have the impact of adding to the UKs GHG emissions (see sections 15.7.27 and 15.7.28). Furthermore, due to the potential for increased climate variability and frequency of extreme weather events, the Proposed Development's vulnerability will be considered with respect to: material deterioration due to high temperatures and periods of heavy rainfall; flooding and damage to drainage systems; and storm damage to structures and other assets (Table 15-5 of the Scoping Report presents a full description of potential effects).

The Inspectorate has provided comments below on matters that the Applicant has set out as being scoped out of the EIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
1	Table 15-3	GHG assessment of deconstruction, demolishing, and decommissioning.	Notwithstanding comments made at paragraph 2.3.7 of this Opinion the Inspectorate is content to scope decommissioning out of the assessment of climate in the ES.
2	15.7.11 and Table 15-3	GHG assessment of operational water use, other operational processes, transport of plant and equipment to the construction site	Noting that the Scoping Report predicts low GHG emissions, and given the nature of the Proposed Development, it is agreed that significant effects are unlikely to arise, but the Inspectorate asks that the evidence for scoping these processes is included in the ES. Specifically, The reasoning (ie the 'cut-off rules') for exclusion should be given in the ES, and an explanation of what is meant by 'other operational processes'.

Scoping Opinion for
Proposed Lower Thames Crossing

	Para	Other points	Inspectorate's comments
3	15.4.3	Climate change adaptation assessment	As set out in the NPSNN the Applicant should take into account the potential impacts of climate change using the latest UK Climate Projections, this should include the anticipated UKCP18 projections where appropriate. The predicted climate changes presented in the Scoping Report appear to contradict one another. The Applicant must ensure the data relevant to the assessment is presented clearly in the ES.
4	15.7.3	Study Area – south East of England	The inspectorate has concerns regarding the robustness of the assessment over this large study area. The ES should include a justification of the chosen study area with reference to relevant guidance and consultation undertaken, if applicable.
5	15.7.4	Study Area	The Inspectorate requests that the traffic model area is defined in the ES, and acknowledges this information will underpin the traffic, air quality and noise assessments as well as the assessment in this chapter. With this in mind, it would be appropriate to cross reference in this chapter to where it is defined elsewhere in the ES.

4.11 Cumulative Effects

(Scoping Report Chapter 16)

From the information in the Scoping Report, the study area (or Zone of Influence, ZoI) for the cumulative effects assessment is determined relevant to the environmental aspect considered, which in turn informs the determination of what 'other developments' to be included. This chapter explains how the list of other projects is to be determined and Figure 16.1 illustrates the location of those identified at the scoping stage.

In terms of methodology, the Scoping Report states that the list of other developments is to be determined following the advice in the Inspectorate's Advice Note on cumulative effects assessment. The Scoping Report outlines the approach taken to setting the ZoI, and to applying criteria to arrive at a short list of developments for detailed information gathering. Chapter 16 explains how a 'tiered approach' will be applied to allow judgement on the certainty of other development in the ZoI going ahead at the same time as the Proposed Development. As well as inter-project effects, intra-project effects also form part of this assessment. The methodology for this aspect of the assessment is based on identifying receptors which are subject to residual effects under more than one environmental assessment.

The Applicant has not identified any potential cumulative impacts at this stage.

The Inspectorate has provided comments below on matters that the Applicant has set out as being scoped out of the CIA.

ID	Para	Applicant's proposed matters to scope out	Inspectorate's comments
1	16.2.14	Methodology	The Scoping Report describes how developments which do not/will not overlap on a temporal scale with the Proposed Development, and do not meet defined criteria for scale and nature, will not be included in the 'short list' for the scope of the cumulative assessment. The methodology is clearly laid out and justified and the Inspectorate is content with this approach.
ID	Para	Other points	Inspectorate's comments
2	16.2.8 To 16.2.18	Study area/methodology	The Inspectorate acknowledges the intention to refine the Zone of Influence in light of the emerging traffic model, and the proposed inclusion of other Road Investment Strategy road projects. The Inspectorate notes that there are a number of other proposed NSIP developments in proximity to the Proposed Development. The

Scoping Opinion for
Proposed Lower Thames Crossing

			Applicant's assessment should be consistent with advice contained in the Inspectorates Advice Note 17. The ES should in particular assess any impacts the Proposed Development may have with and to other proposed development. The Applicant's attention is drawn to the comments of Port of Tibury London Ltd (PoTLL) in this regard, and particularly the timescales applicable to the assessment and overlapping impacts to proposed mitigation.
3	General	Scope – other developments	The cumulative assessment should be based on the most up to date information available regarding the other developments considered. The EA, the Forestry Commission, and TC all provide comment on additional developments which should be taken into account in the assessment. NE also refer to a number of other developments including the A2 Bean to Ebbsfleet Improvement Scheme which has been subject to a request for a Scoping Opinion from the Inspectorate. The Applicant should have regard to this information when determining the scope of the assessment.

5. INFORMATION SOURCES

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

- Pre-application prospectus³
- Planning Inspectorate advice notes⁴:
 - Advice Note Three: EIA Notification and Consultation;
 - Advice Note Four: Section 52: Obtaining information about interests in land (Planning Act 2008);
 - Advice Note Five: Section 53: Rights of Entry (Planning Act 2008);
 - Advice Note Seven: Environmental Impact Assessment: Preliminary Environmental Information, Screening and Scoping;
 - Advice Note Nine: Using the Rochdale Envelope;
 - Advice Note Ten: Habitats Regulations Assessment relevant to nationally significant infrastructure projects (includes discussion of Evidence Plan process);
 - Advice Note Twelve: Transboundary Impacts
 - Advice Note Seventeen: Cumulative Effects Assessment; and
 - Advice Note Eighteen: The Water Framework Directive.

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

³ The Planning Inspectorate's pre-application services for applicants. Available from: <https://infrastructure.planninginspectorate.gov.uk/application-process/pre-application-service-for-applicants/>

⁴ The Planning Inspectorate's series of advice notes in relation to the Planning Act 2008 process. Available from: <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/>

APPENDIX 1: CONSULTATION BODIES FORMALLY CONSULTED

TABLE A1: PRESCRIBED CONSULTATION BODIES⁵

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive
The National Health Service Commissioning Board	NHS England
The relevant Clinical Commissioning Group	Thurrock Clinical Commissioning Group
The relevant Clinical Commissioning Group	Havering Clinical Commissioning Group
The relevant Clinical Commissioning Group	Dartford, Gravesham and Swanley Clinical Commissioning Group
The relevant Clinical Commissioning Group	Medway Clinical Commissioning Group
The relevant Clinical Commissioning Group	Basildon and Brentwood Clinical Commissioning Group
Natural England	Natural England
The Historic Buildings and Monuments Commission for England	Historic England - East of England, Gt London and South East
The Historic Buildings and Monuments Commission for England (OFFSHORE ONLY)	Historic England
The relevant fire and rescue authority	Essex County Fire and Rescue Service
The relevant fire and rescue authority	Kent Fire and Rescue Service
The relevant fire and rescue authority	London Fire Brigade
The relevant police and crime commissioner	Kent Police and Crime Commissioner
The relevant police and crime commissioner	Essex Police and Crime Commissioner
The relevant police and crime commissioner	Mayor's Office for Policing and Crime

⁵ Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) (the 'APFP Regulations')

SCHEDULE 1 DESCRIPTION	ORGANISATION
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Higham Parish Council
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Shorne Parish Council
The relevant parish council(s) or, where the application relates to land [in] Wales or Scotland, the relevant community council	Cobham Parish Council
The Environment Agency	The Environment Agency - Kent, South London and East Sussex; East Anglia and Hertfordshire & North London
The Maritime and Coastguard Agency	Maritime & Coastguard Agency
The Marine Management Organisation	Marine Management Organisation (MMO)
The Civil Aviation Authority	Civil Aviation Authority
The Relevant Highways Authority	Essex County Council
The Relevant Highways Authority	Kent County Council
The Relevant Highways Authority	London Borough of Havering
The Relevant Highways Authority	Thurrock Council
The relevant strategic highways company	Highways England - East; South East
Transport for London	Transport for London
The relevant internal drainage board	North Kent Marshes Internal Drainage Board
Trinity House	Trinity House
Public Health England, an executive agency of the Department of Health	Public Health England
Relevant statutory undertakers	See Table 2 below
The Crown Estate Commissioners	The Crown Estate
The Forestry Commission	Forestry Commission - East England
The Secretary of State for Defence	Ministry of Defence

SCHEDULE 1 DESCRIPTION	ORGANISATION
The Health and Safety Executive	Health and Safety Executive

TABLE A2: RELEVANT STATUTORY UNDERTAKERS⁶

STATUTORY UNDERTAKER	ORGANISATION
The relevant Clinical Commissioning Group	Thurrock Clinical Commissioning Group
The relevant Clinical Commissioning Group	Havering Clinical Commissioning Group
The relevant Clinical Commissioning Group	Dartford, Gravesham and Swanley Clinical Commissioning Group
The relevant Clinical Commissioning Group	Medway Clinical Commissioning Group
The relevant Clinical Commissioning Group	Basildon and Brentwood Clinical Commissioning Group
The National Health Service Commissioning Board	NHS England
The relevant NHS Trust	London Ambulance Service NHS Trust
The relevant NHS Trust	East England Ambulance Service NHS Trust
The relevant NHS Foundation Trust	South East Coast Ambulance Service NHS Foundation Trust
Railways	Network Rail Infrastructure Ltd
Railways	High Speed 1 Ltd
Railways	Network Rail (High Speed) Ltd
Railways	Highways England Historical Railways Estate
Road Transport	Transport for London
Dock and Harbour authority	Port of Tilbury London Ltd
Dock and Harbour authority	Port of London Authority
Lighthouse	Trinity House
Civil Aviation Authority	Civil Aviation Authority

⁶ 'Statutory Undertaker' is defined in the APFP Regulations as having the same meaning as in Section 127 of the Planning Act 2008 (as amended)

STATUTORY UNDERTAKER	ORGANISATION
Licence Holder (Chapter 1 Of Part 1 Of Transport Act 2000)	NATS En-Route Safeguarding
Universal Service Provider	Royal Mail Group
Homes and Communities Agency	Homes and Communities Agency
The relevant Environment Agency	The Environment Agency - Kent, South London and East Sussex; East Anglia and Hertfordshire & North London
The relevant water and sewage undertaker	Anglian Water
The relevant water and sewage undertaker	Essex and Suffolk Water
The relevant water and sewage undertaker	Thames Water
The relevant public gas transporter	Cadent Gas Limited
The relevant public gas transporter	Energetics Gas Limited
The relevant public gas transporter	Energy Assets Pipelines Limited
The relevant public gas transporter	ES Pipelines Ltd
The relevant public gas transporter	ESP Connections Ltd
The relevant public gas transporter	ESP Networks Ltd
The relevant public gas transporter	ESP Pipelines Ltd
The relevant public gas transporter	Fulcrum Pipelines Limited
The relevant public gas transporter	GTC Pipelines Limited
The relevant public gas transporter	Independent Pipelines Limited
The relevant public gas transporter	Indigo Pipelines Limited
The relevant public gas transporter	Quadrant Pipelines Limited
The relevant public gas transporter	National Grid Gas Plc
The relevant public gas transporter	National Grid Gas Plc
The relevant public gas transporter	Scotland Gas Networks Plc
The relevant public gas transporter	Southern Gas Networks Plc
The relevant public gas transporter	Wales and West Utilities Ltd
The relevant electricity generator with CPO Powers	RWE Generation UK Plc
The relevant electricity distributor with CPO Powers	Energetics Electricity Limited
The relevant electricity distributor with CPO Powers	ESP Electricity Limited

STATUTORY UNDERTAKER	ORGANISATION
The relevant electricity distributor with CPO Powers	G2 Energy IDNO Limited
The relevant electricity distributor with CPO Powers	Harlaxton Energy Networks Limited
The relevant electricity distributor with CPO Powers	Independent Power Networks Limited
The relevant electricity distributor with CPO Powers	Peel Electricity Networks Limited
The relevant electricity distributor with CPO Powers	The Electricity Network Company Limited
The relevant electricity distributor with CPO Powers	UK Power Distribution Limited
The relevant electricity distributor with CPO Powers	Utility Assets Limited
The relevant electricity distributor with CPO Powers	Utility Distribution Networks Limited
The relevant electricity distributor with CPO Powers	UK Power Networks Limited
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc
The relevant electricity transmitter with CPO Powers	National Grid Electricity Transmission Plc

TABLE A3: SECTION 43 CONSULTEES (FOR THE PURPOSES OF SECTION 42(1)(B))⁷

LOCAL AUTHORITY⁸
Brentwood Borough Council
Gravesham Borough Council
Havering London Borough
Thurrock Council
Epping Forest District Council
Chelmsford City Council

⁷ Sections 43 and 42(B) of the PA2008

⁸ As defined in Section 43(3) of the PA2008

LOCAL AUTHORITY⁸
Basildon Council
Castle Point Borough Council
Sevenoaks District Council
Tonbridge and Malling Borough Council
Dartford Borough Council
Medway Council
London Borough of Bexley
London Borough of Redbridge
London Borough of Barking and Dagenham
Kent County Council
Essex County Council
Cambridgeshire County Council
Suffolk County Council
Surrey County Council
East Sussex County Council
Southend-on-Sea Borough Council
London Borough of Enfield
London Borough of Waltham Forest
London Borough of Bromley
Hertfordshire County Council
Greater London Authority

THE GREATER LONDON AUTHORITY

The Greater London Authority (GLA) have also been identified as a consultation body under the EIA Regulations because the proposed application relates to land within Greater London.

TABLE A4: NON-PRESCRIBED CONSULTATION BODIES

ORGANISATION
Royal National Lifeboat Institution

APPENDIX 2: RESPONDENTS TO CONSULTATION AND COPIES OF REPLIES

Consultation bodies who replied by the statutory deadline:

Anglian Water
Cadent Gas Ltd (via Fisher German LLP)
Dartford Borough Council
Environment Agency
ESP Utilities Group Ltd
Essex County Council
Fisher German LLP
Forestry Commission
Gravesham Borough Council
Health and Safety Executive
Historic England
Kent County Council
Kent Fire and Rescue Service
London Borough of Barking and Dagenham
London Borough of Havering
Marine Management Organisation
Maritime and Coastguard Agency
Medway Council
Ministry of Defence
National Air Traffic Service
National Grid
Natural England
Port of London Authority
Port of Tilbury London Ltd
Public Health England
Royal Mail Group Ltd
Sevenoaks District Council
Shorne Parish Council
Southern Gas Network

Scoping Opinion for
Proposed Lower Thames Crossing

Surrey County Council
Thurrock Council
Transport for London
Trinity House



Gail Boyle
Senior EIA and Land Rights Advisor
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol, BS1 6PN

**Strategic Planning Team
Water Resources
Anglian Water Services Ltd**
Thorpewood House,
Thorpewood,
Peterborough
PE3 6WT

Tel (0345) 0265 458
www.anglianwater.co.uk
Our ref 00024637

Your ref TR010032-00007

1 December 2017

Dear Gail,

Lower Thames Crossing: Environmental Statement Scoping Report

Thank you for the opportunity to comment on the scoping report for the above project. Anglian Water is the sewerage undertaker for the part of the site located to the north of the river Thames. The following response is submitted on behalf of Anglian Water.

General comments

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 if we could discuss the following issues:

- Wording of the Draft DCO including protective provisions specifically for the benefit of Anglian Water.
- Requirement for wastewater services.
- Impact of development on Anglian Water's assets and the need for mitigation.
- Relationship to other nationally significant infrastructure projects e.g. Tilbury 2.
- Pre-construction surveys.

Registered Office
Anglian Water Services Ltd
Lancaster House, Lancaster Way,
Ermine Business Park, Huntingdon,
Cambridgeshire. PE29 6YJ
Registered in England
No. 2366656.

an AWG Company

2.15 Services and Utility Diversions

Reference is made to the diversion of existing services and utilities. There are existing Anglian Water sewers located within the boundary of the site which potentially be affected.

The design of the above scheme is to be refined further by the applicant. Therefore the extent to which existing sewers would be affected will need to be defined with the assistance of Anglian Water.

The Environmental Statement should include reference to Anglian Water's existing assets and any potential impacts from the above development. We would expect any requests for alteration or removal of foul sewers or water mains to be conducted in accordance with the Water Industry Act 1991.

Maps of Anglian Water's assets are available to view at the following address:

<http://www.digdat.co.uk/>

14 Road Drainage and the Water Environment

Reference is made to discussions with the Environment Agency and Lead Local Flood Authorities in relation to the risk of fluvial, surface water and ground water flooding. 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.

At this stage it is unclear whether there is a requirement for wastewater services for the above site. It is suggested that the Environmental Statement should include reference to the foul sewerage network and sewage treatment.

Should you have any queries relating to this response please let me know.

Yours sincerely

A solid black rectangular box used to redact the signature of Stewart Patience.

Stewart Patience

Spatial Planning Manager

From: [Iain Long](#)
To: [Lower Thames Crossing](#)
Subject: Lower Thames Crossing - Cadent Gas
Date: 24 November 2017 17:16:41
Attachments: [Mimecast Large File Send Instructions.msg](#)

I'm using Mimecast to share large files with you. Please see the attached instructions.

For the attention of Gail Boyle,

Dear Gail

Fisher German LLP have been instructed by Cadent Gas Ltd in respect of the A585 Windy Harbour

Cadent will have infrastructure affected by your proposals. Please can you confirm if you have already received this asset location information, or if you have requested it. We can provide plans if required.

Please can you ensure future correspondence regarding Cadent is issued to my details below at Fisher German, The Estates Office, Norman Court, Ashby De la Zouch, Leics, LE65 2UZ

If you require anything else from Cadent in the meantime please let me know.

Kind regards

This email has been scanned by the Symantec Email Security.cloud service.
For more information please visit <http://www.symanteccloud.com>

FAO: Gail Boyle
The Planning Inspectorate
3D, Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Please ask for: Mrs Sonia Bunn
Direct Line: (01322) 343620
Direct Fax: (01322) 343047
E-mail: Sonia.Bunn@dartford.gov.uk
DX: 142726 Dartford 7
Your Ref: **TR010032-000007**
Our Ref: DA/17/01893/OBB
Date: 1st December 2017

Dear Sir,

Planning Act 2008 (as amended)

**EIA Scoping Consultation for the Lower Thames Crossing
Lower Thames Crossing**

The Council welcomes being given the opportunity to make comment before the Scoping Opinion is given.

Dartford Borough Council lies to the west of the proposal but will be significantly impacted by the “do nothing option” that is assessed and seeks to ensure that committed development in the area is fully assessed. It is also keen to ensure that given the nature of the traffic movements on the strategic road networks a wide enough area is considered with regard to cumulative impacts. The Council would request that the following detailed comments on the scoping methodology and mitigation to be addressed in the Environment Impact Assessment are considered:

Air Quality

The proposal states that three scenarios are to be modelled: base line, do minimum (i.e. project not in operation) and do something. In order to fully assess the impact of these scenarios at the existing crossing further consideration should be given to the impact that would be felt on local roads. The scoping report states that receptors are to be considered within 200m of the project, as beyond this pollution levels return to background, however the impacts on the local road network resulting from vehicles displaced from the trunk road on to the local road network is felt over a much greater distance. If the Project is not built forecasts of air quality should also be applied at the existing Dartford Crossing, which the Project is intended to relieve (Para 6.2..2).

The scoping report states that the local air quality results are used to assess whether the project represents a risk to compliance with the EU Ambient Air Quality Directive. It should be noted that the PCM model used by DEFRA to determine compliance with this directive does not identify a breach of EU limit values at the existing Dartford crossing, which is not consistent with local air quality monitoring results.

Fig 6.1: The area shown on the Air Quality Management Areas and Exceedances map should be extended to include the Dartford Crossing, since there may be beneficial effects if the Project is implemented at the A282 Crossing Approach as well as the A2 approach to the M25, both of which have AQMA's.

Noise

The Council has some concerns with regard to the methodology proposed for the noise assessment and its reliance on the DMRB model. Although this does not have a direct impact on the Borough, the Council is keen to ensure that they take a consistent approach in responding to scoping reports. As this guidance gives unreliable predictions of noise exposure where barriers are concerned and has limitations in terms of the accuracy at distance from the proposed carriageway, the Council's Environmental Health Officer advises that ISO 9613 may provide a more accurate model for both barriers and distance. It is noted that Amax levels have not been included in the scoping documentation yet it is clear that impulsive noise is likely to be an issue in the construction phase.

It is also unclear without extensive evaluation (not DMRB) how the requirements of paragraph 5.195 of the NPSNN can be met as this is fundamental and is effectively the requirement for the Noise Policy Statement for England (NPSE) and must be met to demonstrate acceptability.

People and Communities

In considering the impact on People and Communities, a wider spatial context should be considered with regard to the 'local and wider economy'. It is not clear at para 13.1.3 that the cumulative impact of the Project in combination with other large-scale projects in the wider area is to be considered. Table 13-4 only refers to the host boroughs in with respect to the 'wider study area'. Dartford Council considers that due to the significance of developments in its area, the study area should be extended to cover Dartford. Likewise, Figure 16.1 showing current planned 'other developments' in the Zone of Influence should be extended to include the Dartford area and that these other developments should include the proposed London Resort which has been accepted as a Nationally Significant Impact Proposal and a DCO is to be submitted in 2018. The scoping report seems to be conflicted over what is Zone of Influence, as table 1-1 advises 500km.

It should be noted that unemployment in Dartford is below the national average. The cumulative impacts of development need to consider the potential for labour shortages. However, as mitigation, the intra-project effects need to take account of improved journey times from north of the River Thames and the potential to draw on a wider labour market.

It is noted that work to assess user charging is ongoing. The Council would welcome discussion on proposals which are to form part of the scenarios to be tested. It is likely that the charging regime will have a significant impact on the use of the crossing, with an integrated charging strategy for east Thames river crossings being essential to ensuring that maximum benefit is gained from the new traffic capacity.

Dartford experiences significant demand adjacent to the Dartford Crossing from employment uses seeking close proximity to the strategic road network. In this respect, the Council would welcome a comprehensive assessment of a new junction at the A226 to understand the implications for investment and economic development opportunities at this location and to establish potential benefits of spreading demand over the North Kent area and mitigating potential over-heating in the proximity of the Dartford Crossing in the future.

Mitigation issues

Section 2.8 refers to the technology to be utilised as part of the project. It is welcomed that the need for additional variable message signs on the roads approaching the Project (M25, A2 and A13) will be discussed with stakeholders as part of the project development. However, the current message signing at the approach to the Dartford crossing is considered inadequate and an enhancement of this should be considered (para 2.8.7).

There is no reference in the Technology section to the use of mobile communications with freight traffic. It is hope this will be considered further as the project is developed and discussed with stakeholders, so as to ensure the most effective utilisation of the new capacity.

There is no mention in the description of the Project of how over-size and special loads will be dealt with. Again, it is hoped this will be discussed with stakeholders as part of the further development of the Project.

Ebbsfleet Development Corporation

As PINs will be aware the Ebbsfleet Development Corporation (EDC) lies partly within the administrative boundary of Dartford and is the local Planning Authority with regard to Development Management. Dartford Borough Council and the EDC have an on-going relationship of consulting each other and working together on proposals that have wider strategic impacts. The Council has therefore consulted the EDC on this Scoping report in order to ensure the opinion of the all the planning authorities affected by the proposal is provided. For clarity the Council has attached the response from the EDC directly to this and would support the comments in their letter of 28th November 2017 which reflect the Council's views.

Yours faithfully



DIRECTOR OF REGENERATION

Planning Inspectorate
Room 4/04 Kite Wing
Temple Quay House (2 The Square) Temple
Quay
Bristol
Avon
BS1 6PN

Our ref: KT/2017/123548/01-L01
Your ref: TR010032-000007
Date: 1 December 2017

Dear Sir/Madam

EIA SCOPING OPINION REPORT - LOWER THAMES CROSSING

Thank you for consulting us on this EIA scoping opinion report. We would like to offer the following advice:

Surface Water Drainage and Biodiversity - Kent

We have had some early discussions with the applicant relating to surface water drainage on the north Kent section of the road. The scoping report suggests that highways drainage will discharge to soakaway in this area. This has yet to be agreed however, as soakaways at this location may pose an unacceptable risk to groundwater. Highways drainage discharging to the ditch network raises other complexities, therefore we would welcome further discussion with the applicant on this point to allow us work towards a solution.

If highways drainage discharges to the surface water environment in north Kent, the applicant must fully consider the potential water quality and ecological impacts of this. Therefore the ecological assessment must include surveys of the Filborough marshes, and any ditch or watercourse which could receive, or be impacted by highways drainage.

The otter surveys should consider suitable holt locations which could be impacted by highways noise. In addition, they should consider the potential impact of suddenly increasing water levels resulting from drainage. This also applies to the water vole surveys. Ideally preliminary calculations of volumes of drainage should be used to help determine the survey area, as additional water vole surveys may be required to assess these potential impacts.

The surveys note a wide area for potential hydrological impacts on the Ramsar site aquatic invertebrates. However, they should also consider potential chemical impacts from pollution if highways drainage is proposed to discharge to the Ramsar site.

We request to see details of how many ditches will be sampled for aquatic invertebrates. The methodology must be agreed with Natural England and the Environment Agency. There may be historic survey data available for parts of the site. This may help with assessing impacts if it is only possible to gather one year of data. This is important because if there are

particularly dry conditions during 2018, this may produce results that are at variance to normal wetter years.

Surveys should also consider non- Ramsar wetland, such as the local wildlife site at Eastcourt Marshes and the Thames and Medway Canal, as it is possible they may receive highways drainage too.

Surface Water Drainage - Essex

Chapter 2 details two potential options for surface water drainage from the development to the North of the Thames: Discharge to soakaway (probably via swales) or discharge to surface water courses. Whatever options are chosen, the applicant would need to demonstrate that there will be no adverse impact from the construction or operation of the new crossing/road impact on surface waters or groundwater, and further mitigation/attenuation measures may be required to ensure this. There may be areas where swales or soakaways present too great a risk and are not appropriate (at least without some pollution prevention/attenuation measures).

Land Contamination

We have met with the applicant to discuss the proposed temporary works area located east of the northern portal. This area is located over a historic landfill that received liquid hazardous sludge. Further work is required to assess the suitability of this location, as exposing these liquid hazardous wastes should be avoided. Furthermore, the additional surcharging due to the works has the potential to cause mobilisation of these wastes. This must also be assessed. These issues have not been highlighted in the scoping report, and will need full consideration in the EIA.

Dewatering

It is important that the potential impacts on flow in the aquifers from tunneling and dewatering is assessed as part of the EIA. Please note that dewatering will become a regulated activity from 1 January 2018. We look forward to further discussion relating to dewatering and the pump tests.

Flood Risk Assessment

We have had some preliminary discussions with the applicant to determine the scope of the flood risk assessment (FRA). We are keen to continue engaging with the applicant regarding this, and the supporting flood modelling that they will need to undertake. We have provided detailed comments below in the section entitled "specific comments on the report". Please note, control buildings, service buildings satellite compounds and sub stations (both temporary and permanent) should ideally be above the 0.1 ccAEP (1 in 1000) to ensure they remain operational in the extreme event.

Flood Risk Management Assets and Defences

Thames Estuary 2100 Plan

The EIA will need to consider the interactions between the Lower Thames Crossing (LTC) project and the Thames Estuary 2100 (TE2100) Plan. For example, a new tidal flood barrier may need to be constructed in the estuary by 2070, and Tilbury is one of the potential locations of this barrier. We would welcome further discussions to ensure that the LTC does not limit options for a flood barrier at this location in the future. It is also worth noting that the

LTC project will become a beneficiary of future flood defence works in this area, and therefore we may seek contributions from you for these works.

As part of our current programme of works delivered through TEAM2100, we will need to carry out environmental and heritage surveys and assessments at similar locations to the LTC. There may be opportunities to deliver some of these assessments in partnership, to reduce cost to the public purse.

Kent

The LTC is likely to significantly impact on our appraisal of the Shorne & Higham Marshes tidal defences as part of our TEAM2100 programme. The defences in the eastern part of this area currently have a P3 policy which means we will not keep pace with climate change, and therefore the standard of protection from flooding will decline over time. This is likely to have an impact on the tunnel and services including the tunnel portal itself. Please note, today's undefended flood map does not include for climate change scenarios.

Essex

We are particularly interested in the addition of the spur road to Tilbury Port. It appears that this section of road will have at least 6 interfaces with main river. This is a complex area from a flood risk management perspective, and we would welcome further detailed discussions. We would also welcome detailed discussions on the proposed construction compound which may temporarily culvert extensive sections of the West Tilbury Main. We do not maintain this section, however the sluice and adjacent tidal defences are scheduled for works to be undertaken by TEAM2100. It would be advisable that at least 16m from the landward toe of the tidal defences are left clear during construction, so that works to the defences may be carried out.

The applicant should be aware that due to coastal processes, the historic landfills on the northern riverbank are becoming exposed and eroding.

The proposed new jetty could impact on the existing flood defence infrastructure, and the Thames Estuary more generally. This will need to be considered with the EIA.

Marine Water Quality

The scoping opinion appears to satisfactorily scope marine water quality issues. These are generally restricted to the potential construction of a jetty in the Thames Middle Water Framework Directive (WFD) waterbody, with associated potential dredging and piling works. A full WFD assessment of the proposals will need to be undertaken in due course.

Ecological Enhancement and Project Legacy

With a project of this nature and scale, there are likely to be significant environmental impacts and a need for substantial mitigation or compensatory habitat. We would strongly encourage the applicant to consider ambitious environmental enhancements on a strategic scale. We would be keen to meet with the applicant, jointly with partners such as Natural England and the Forestry Commission to discuss options.

Specific Comments on the Report

2.5 - We are keen to be consulted on this topic as the project progresses.

2.6.4 - The use of a variety of SuDS techniques can create ecological enhancements. There

must be no deterioration to the WFD status of the relevant waterbodies.

2.10 .2 - Not all parts of the development that lie within flood zone 3 benefit from existing flood defences. Flood defences in the area provide protection against tidal flooding from the Thames, but these defences do not protect against fluvial flooding (e.g. the River Mardyke and West Tilbury Main) where the route passes through fluvial floodplain. We note that a FRA will be prepared (section 2.10.1) to demonstrate how flood risk to the development will be managed now and when taking future climate change into account. This should include consideration of fluvial as well as tidal flood risks.

2.12.9 – There is a clear risk to the current flood defence embankments during construction of the tunnel. We need to be clear not only about the potential settlement on the embankment but also the potential for failure of the embankments during construction. We note in Section 14.9 that construction phase monitoring of existing flood defences will take place, which we welcome. We would expect this to include associated flood defence assets and also advise that monitoring should be continued post construction phase.

2.13.7 – The construction compound should be considered in the FRA. The impact of any land raising and/or stockpiling with the floodplain will need to be considered in terms of their wider impact on the flood cell, both tidal breach flood risk and fluvial flood risk. We do not have modelled fluvial flood data for West Tilbury Main (a designated main river) and therefore any proposals for positioning a compound within the floodplain will need to be supported by flood modelling to demonstrate no increased risk to people, property or land.

2.17.5 – Consideration will need to be given to where tunnel arisings will be stored. If this storage will be required within the floodplain, then this will need to be considered in detail within the FRA to ensure no increased flood risk.

2.17.6 - There should be an ambition to beneficially re-use tunnel arisings where possible.

2.17.7 - Any embankments required for the highway that cross floodplain will need to be thoroughly considered within the FRA to show there will be no increase in flood risk as a result.

3.2.7 - Although it would appear from the plans that the tunnel portals will be outside of the current undefended floodplain, we request confirmation on this point. The FRA should consider whether, with climate change, the tunnel portals could come within flood zone 3 in the future, and therefore require their own defences.

9.2.8 - We strongly agree with the statement that the development should use opportunities for building beneficial biodiversity. Please see our comments above on “Ecological Enhancements and Project Legacy”.

9.7.7 - Further details of the compound and spoil strategy will be required as part of the EIA.

9.7.14 - Post-construction monitoring will be required of any habitat creation/ enhancement projects to ensure long-term viability.

10.4.18 - Please note that the watercourses are a mixture of main river and ordinary watercourses.

10.4.59 - When the Environment Agency constructed the defences in this area in the 1980s, we experienced issues with stability in a section near to the Thames. This is unlikely to

impact the tunnel and it should be possible to address this with details gathered during ground investigations. However, we may hold some details on this topic if it were of use to the LTC project team.

10.4.73 - For information, the main river north of the railway also receives pumped groundwater from the Network Rail Higham Tunnel.

10.8.12 - A long term monitoring scheme will be required to monitor settlement of the surrounding land, including the flood defences.

12.2 - Third Party Assets: This must include all Flood Defence structures and associated assets, as we note they are not specifically mentioned. We note that the proposed monitoring and mitigation measures refer only to during the construction phase. However it likely that this will need to be continued post construction.

12.8.2&3 – The EIA should consider in greater detail the impact of vibration on the flood defences and the risk this poses to their stability during construction.

13.9 – The EIA will need to consider and propose mitigation for any impacts on Environment Agency access for maintenance during the construction phase. For example, whether different access routes would be required.

14.3.1 – This section states that a WFD Assessment Scoping Note has recently been submitted to the Environment Agency. We have not received this note, but would be keen to review it when it becomes available.

14.4.6 - The WFD status for the Mardyke is Moderate at present. The LTC should aim to deliver environmental benefits to enhance this status where possible

14.5.2 - Aquatic water quality sampling may be required for the Ramsar and local wildlife sites where surface water discharge is a possibility. This is because the existing water quality including salinity and pollutants should be well understood to establish how this could be impacted. Sufficient sampling should take place across the site to understand this, whilst taking into account the current prevailing conditions, which during 2018, may include below average long term rainfall. The Road Drainage and Water Environment chapter should explain the proposed drainage strategy and determine its likely impact on the Ramsar/SSSI and Local Wildlife Site. This is because proposals to drain to the wetlands may not be acceptable if this will lead to a change in water chemistry and overall quality. As mentioned above, we are keen to continue discussions with the project team on this point.

14.5.6 - Please note the Thurrock Strategic Flood Risk Assessment is currently being updated, therefore should be referenced if this is published during this project.

14.7.7 & 14.9.1 - We note that compensatory storage will be provided to replace any lost floodplain storage volumes. This should also be expanded to ensure that consideration is given to displaced floodwaters, where flood cells may be divided following the construction of road/placement of spoil, for example.

14.7.15 - These bullet points should also reference integrity of defences.

14.8.7 – Operation: Information should be provided on the impact of surface water delivery and discharge timing against existing hydrological conditions to determine the effects of change on the hydrological regime.

14.9 - We are keen to discuss the design of appropriate watercourse crossings or watercourse diversions.

14.9.1 - As stated above, we would expect the scheme to deliver an ambitious SuDS strategy, and seek opportunities for flood storage and ecological enhancement.

14.9.1 – See note on 10.8.12. It would appear that only Construction Phase monitoring of the existing flood defences is proposed, however post construction monitoring will be required.

14.10.1 - We agree that no aspects/impacts relevant to road drainage and the water environment can be scoped out of the EIA at this stage.

15.9.8 - We note that 'Allowances for increased river flows due to climate change would be incorporated in design of elements'. The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time and ensure any environment statement that is prepared identifies appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of any environment statement, the Examining Authority should consider whether they need to request additional information from the applicant.

Chapter 16 – we consider it would be useful to consider the cumulative impacts of other large projects in this area, such as TE2100, Tilbury2, Tilbury power station, Coryton oil refinery and DP World.

Figure 11.1 – This does not show all authorised landfills. The ash disposal landfill is still permitted and forms part of the route.

Table 14-1 - This should also consider water quality and water resource impacts from the SuDS scheme.

Table 14.2 - States that the water quality value of unnamed main rivers and ordinary watercourses is low on the basis that they are not classified under WFD. WFD applies to all waterbodies, not just those that are classified under WFD. Only waterbodies above a certain size are classified and monitored under our surveillance programme, but WFD requirements still apply to all waterbodies. Some of these watercourses may support important biodiversity. Therefore, they should not automatically be screened out as low quality.

I trust this information is helpful. Please do not hesitate to contact me if you wish to discuss any of the points above.

Yours faithfully

Mr Niall Connolly
Planning Specialist

Direct dial 0208 474 6765
Direct e-mail kslplanning@environment-agency.gov.uk

Environment Agency
Orchard House Endeavour Park, London Road, Addington, West Malling, Kent, ME19 5SH
Customer services line: 03708 506 506
Email: enquiries@environment-agency.gov.uk
www.gov.uk/environment-agency

From: [ESP Utilities Group Ltd](#)
To: [Lower Thames Crossing](#)
Subject: Your Reference: Lower Thames Crossing. Our Reference: PE133390. Plant Not Affected Notice from ES Pipelines
Date: 17 November 2017 11:26:17

Michael Breslaw
Lower Thames Crossing
The Planning Inspectorate

17 November 2017

Reference: Lower Thames Crossing

Dear Sir/Madam,

Thank you for your recent plant enquiry at (Lower Thames Crossing).

I can confirm that ESP Gas Group Ltd has no gas or electricity apparatus in the vicinity of this site address and will not be affected by your proposed works.

ESP are continually laying new gas and electricity networks and this notification is valid for 90 days from the date of this letter. If your proposed works start after this period of time, please re-submit your enquiry.

Important Notice

Please be advised that any enquiries for ESP Connections Ltd, formerly known as British Gas Connections Ltd, should be sent directly to us at the address shown above or alternatively you can email us at: PlantResponses@espipelines.com

Yours faithfully,

Alan Slee
Operations Manager



Bluebird House
Mole Business Park
Leatherhead
KT22 7BA

☎ 01372 587500 📠 01372 377996

<http://www.espug.com>

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FAO Ms Gail Boyle
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol,
BS1 6PN

Our ref: ECC/LTC/Scoping Opinion
Your Ref: TR010032-000007
Date: 1 December 2017

Sent by email: LowerThamesCrossing@pins.gsi.gov.uk

Dear Ms Gail Boyle,

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

Proposed application by Highways England (the Applicant) for an Order granting Development Consent for the Lower Thames Crossing

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

Thank you for the opportunity to respond on behalf of Essex County Council (ECC) defined as S43 Local Authority and statutory consultee, to provide comments on the Scoping Report to inform the Environmental Statement (ES) for the proposed new Lower Thames Crossing (LTC) by Highways England (HE).

ECC is a Statutory Consultee, as both a host and neighbouring strategic authority within the definition of the Duty to Co-operate S110 of the Localism Act 2012 and Section 30 of the Planning and Compulsory Purchase Act 2008. The LTC is a strategic cross-boundary matter and ECC wish to engage with this process, with the following relevant roles:

- a key partner and service provider within Essex promoting economic development, regeneration, infrastructure delivery and new development for the benefit of Essex and the region;
- The highways and transportation authority for Essex, with responsibility for the delivery of the Essex Local Transport Plan;
- The Minerals and Waste Planning Authority and Local Lead Flood Authority for Essex;
- The Public Health advisor for the county of Essex; and
- The Local Education Authority for Essex and as a key partner in the promotion of employability and skills.

ECC has a long history of close working with Thurrock Council, a neighbouring unitary authority within Greater Essex and partner authorities in South Essex, within London Thames Gateway; South East Local Enterprise Partnership (SELEP) and the Opportunity.

South Essex Partnership (OSE). It will be necessary for HE to have regard to the wider regional priorities, as set out by ECC, SELEP and OSE.

The proposed development is of significance to ECC, given the importance and potential impact on the Essex economy, environment and transport network (both road and rail) and in particular Essex's connectivity with London.

ECC has been actively engaged with HE throughout the process to date including our response 24 March 2016 which supported a new crossing at Location C, east of Gravesend and Tilbury, in which we stated:

Economic benefits – the economic benefits of a new Crossing at Location C are significant and this location has the greatest potential for regeneration and job creation. These benefits are of a substantially greater scale than expansion of capacity at Dartford can provide. A study undertaken by KPMG in 2010 calculated that a new crossing at Location C could contribute £12.7 billion to the local economy.

Network resilience – the provision of an independent crossing built to modern standards and suitable for all users will not only radically improve the resilience of crossing the Lower Thames but also the resilience of the strategic road network (SRN) between Kent, the Midlands/North and mainland Europe.

Strategic transport benefits – the Highways England consultation documents and other studies have shown that during incidents at Dartford, traffic diverts to other crossings (notably the Blackwall Tunnel) or the long way around the M25. Providing a suitable alternative crossing point, has the dual benefit of releasing capacity at Dartford and elsewhere on the Strategic Road Network (SRN). The provision of a faster, more reliable route to the Midlands and North from the Channel ports will be particularly attractive to long-distance freight traffic and will have the benefit of diverting many of these journeys away from Dartford.

ECC wishes to continue to engage with this ongoing process, to develop the Preliminary Environmental Information Report (PEIR) and inform the Environmental Statement, that will form part of the application for the DCO application for the LTC .

ECC has identified a range of issues and comments regarding the Scoping Report, which require further clarification, additional information and actions to be incorporated within the Environmental Statement. ECC's comments are outlined below and detailed within Annex 1.

Strategic Approach to HE engagement with ECC on Projects across Essex

ECC note that there are a number of significant HE transport projects within and adjoining Essex, including M25 Junction 28 improvements, A12 improvements and A120 to A12. This provides a unique opportunity for ECC and HE, to discuss and explore a consistent and co-ordinated strategic approach to the development and implementation of these projects to provide a cumulative benefit for all parties. For example, the potential benefits for local employment and development of construction and engineering skills across the area.

General Overview of the Scoping Report

The format for each environmental topic, as outlined in section 1.7 and Table 1-3 is of assistance and provides some clarity on the topics, emerging data, assessments and

mitigation proposals to date. That said the omission of a dedicated “Transport” section summary or identification of where transport issues are embedded within the report should be addressed.

The Scoping Report rightly focuses on the immediate environmental issues, but the Examining Inspectors will surely wish to see forecast traffic figures upon which to assist their judgements. We understand that final figures are still in preparation but will be available for submission with the draft Development Consent Order. ECC therefore request the preparation of a full Transport Assessment as soon as this information does become available, the scope of which should be agreed with the ECC as soon as possible.

ECC would have anticipated a dedicated transport section within this Scoping Report, as part of the overall Environmental information. This was a key aspect of ECC’s response to earlier consultations that traffic routing changes in Essex and strain on network links or junctions, be identified through the development of the project and mitigation/proposals identified to deal with this. The transport assessment should provide this information to enable both HE and ECC strategic networks to be planned holistically away from the crossing point and new road itself.

NSIP Procedural comment

It is noted that the Planning Inspectorate assigned projects to geographical areas to make them “easier to find”, however this project covers two geographical areas on the PINS website. It is further noted that the majority of the project is located within the “East of England”, however the project has been assigned to the “South East” page. It is recommended that the project is also listed with a weblink on the “East of England” page, to assist with accessibility to the information.

ECC Comments by Service Area:

The nature and scope of the consultations responses that follow concern:

- Highways and Transportation
- Minerals and Waste Planning
- Lead Local Flood Authority – Flood and Water Management
- Public Health and Well-being
- Strategic Planning, Economic Growth, Regeneration and Skills
- Historic Environment and Archaeology
- Landscape; and
- Natural Environment

Highways and Transportation

As indicated above ECC wish to be fully engaged in the Transport Assessment to accompany this project and would anticipate this being a dedicated section within the PEIR. The issues for ECC are the impact on the Essex community and businesses, including all transport users, both directly and connectively to London but also the wider transport implications including changes in demand on strategic routes.

The proposal is of importance for securing on-going growth for both London, Essex, the UK and connection to mainland Europe. The engagement with Kent, Thurrock, Transport for London (TfL) and ECC as the respective host Highways Authorities, regarding connectivity, capacity and network resilience is welcomed. It is recommended that this is extended to include the neighbouring Transport and Highways Authorities, given the extent of the sphere of influence in the proposed transport model in plate 2-1. Any transport assessment should

be extended to include the A12, A120, A127, A130, A131, A13, A414 and M11 (the strategic routes), in addition to assessing the provision of further Thames river crossings in east London and the ongoing Tilbury2 DCO application.

The above strategic routes provide connectivity within Essex and connect Essex to London and the wider UK and are vital for connecting the economies of Essex and London. The impacts on these routes need to be understood, alongside the cumulative impacts from other London projects such as the Silvertown Tunnel and planned growth locations (London City east), Tilbury2, as well as the range and timings of the other HE transport projects in Essex. ECC needs to be satisfied that any impacts on the strategic routes connectivity, capacity and resilience are addressed and the potential benefits for the Essex economy are optimised. ECC requires further data and analysis on the wider strategic routes to:

- Identify the impact on Essex and surrounding areas;
- Understand employee access to the site for construction and operation, job numbers and expected modes of travel (including sustainable access and potential links with London Gateway and Port of Tilbury);
- Evaluate the impact, with regard to TfL transport projects in the vicinity of the scheme and Essex;
- Establish the projected increase in traffic arising from the scheme and the cumulative impact of current planned growth (and transport projects) including London City east, South Essex and within Greater Essex (including emerging Local Plan transport modelling);
- Establish the implications, sensitivity and inter-relationship on transport movements across the wider strategic network;
- Understand the timescales for project delivery and the cumulative impacts and timing with other major transport infrastructure projects in the vicinity, be it the, A13 road widening, A127/A130 Fairglen Interchange improvements, the A127 route management strategy; A130, M25 junction 28, A12 improvements and A120 Braintree to A12; and
- Understand the sustainable transport provision for employees and freight during both the construction and operational phases of the development. For example how will employees travel to the site?

Minerals & Waste Planning

ECC is the host Minerals and Waste Planning Authority in the two tier administrative area of Essex, and a neighbouring authority. The [Essex Minerals Local Plan - Adopted July 2014](#) concerns the administrative area of Essex only, and seeks to ensure a local supply of aggregates for the County, however there are no wharves for landing mineral in Essex and mineral resources in the south of the County are extremely limited.

The [Essex and Southend on Sea Waste Local Plan - Adopted October 2017](#) concerns the administrative area of Essex and Southend on Sea only.

Thurrock Council is a unitary authority and the respective Minerals and Waste Planning Authority and the appropriate contact for their own Local Plan policies, permissions, site information and capacity data in their administrative area.

Overall, ECC would expect greater clarification and assessment of the wider mineral and waste planning implications within the subsequent Environmental Statement. The issues to be addressed are outlined below and detailed within Annex 1.

Minerals – The Scope of the minerals study areas should include of Thurrock and London (as well as marine aggregates) and not just Kent and Greater Essex.

ECC would expect the scope to include a materials balance (including minerals) and an understanding and assessment of the likely market areas to supply the necessary aggregates and fill materials. This should cover the wider geographic area and have regard to material landed on the river Thames. This should include consideration and timing with the development of the Aggregates wharf proposed within Tilbury2. This should also have regard to the potential use of Borrow Pits and the need to reduce minerals .

Whilst there is no assessment of the impact of the “off-site” primary extraction materials, ECC would expect the Scope to quantify the amount of material and minerals required and to explore the likely sources. This will provide a better understanding of the mineral supply and demand factors, which will be relevant to all the potentially affected Mineral Planning Authorities and their Minerals Local Plans.

Waste - ECC supports the application of the Waste Hierarchy and the use of Sustainable Management of the excavated materials and waste arisings, including recycling and potential re-use/after-uses. ECC would expect this information to be included within a Materials Balance.

ECC would expect the scope of the waste study area to include Thurrock and London and not just Kent and Greater Essex. Further clarification is required on the use and interpretation of ECC on Essex and Southend on Sea Waste Local Plan capacity data.

ECC would anticipate the Scope (and HE) to have regard to the their own NSIP projects in the area as well as other NSIP projects (ie Tilbury2) to consider the potential cumulative impacts and opportunities.

Lead Local Flood Authority – Flood and Water Management

ECC is the Lead Local Flood Authority in the two tier administrative area of Essex, and is the host authority in respect of the “Brentwood” element of the project as well as a neighbouring authority.

ECC would expect the Scope to include provision for above ground attenuation features, and these should be included within the “Redline” boundary of the Application. ECC has raised this in earlier discussions and is concerned that if the space is required for these features is not accounted for at this stage of the process there will be limited scope to increase the extent of the development boundary at a later stage, potentially leading to substandard surface water drainage systems and increase in flood risk or a decrease water quality in these areas. ECC would expect the Scope to explore these issues as previously discussed and for the redline boundary to be amended to facilitate the delivery of a suitable drainage scheme.

Public Health and Wellbeing

ECC is the Public Health advisor in the two tier administrative area of Essex, and is the host authority in respect of the “Brentwood” element of the project as well as a neighbouring authority. ECC Public Health wish to engage with this process in liaison with colleagues in Public Health England and respective Local Authority Public Health advisors.

- The wider determinants of health including employment and training opportunities for residents across the impacted areas needs to be explored in much more detail as this is one of the most positive potential benefits to health.
- There appears to have been no engagement with Public Health as part of the consultation process in Section 13 “People and Communities” which needs to be addressed
- The current proposals for the human health element of the Environmental impact assessment would benefit from Public Health input, advice and guidance.
- A more detailed overarching health element is required as either an extended, integrated EIA or a stand -alone health impact assessment.

Strategic Planning, Economic Growth, Regeneration and Skills

The potential economic benefits of a new crossing are significant and at this location there is the greatest potential for regeneration and job creation. The “proposal” also has the potential to have a significant impact and opportunity on the local and wider area of South and Greater Essex in respect of businesses, economic growth, development and planning, including the potential to contribute £12.7 billion to the local economy. ECC would anticipate the Scope of the engagement to be extended and has provided an additional list of contacts and context, beyond that defined in paragraph 13.3.2.

ECC would expect the Scope of economic engagement and assessment to extend beyond the “Local and Wider” Economy as defined in 13.7.21 and Table 13-4, given the scale of potential economic impact. (see Annex 1).

ECC would also anticipate the Scope to include the development of a supplementary planning document to develop a local employment legacy, skills and training needs, and early engagement with partners including SELEP and local authorities (inc ECC) is recommended.

ECC wishes to draw your attention to the following developments proposed within 200m of the Application Site Boundary:

- ECC: Planned highway improvement scheme at A127/B186 Warley Street Interchange immediately east of M25 Junction 29, scheduled for construction 2018/19
- Brentwood Borough Council: emerging Brentwood Local Plan includes a Strategic Employment Allocation at the M25, Junction 29 (Brentwood Enterprise Park) which is within both the permanent and temporary land requirements within: Figure 2.1 Application Site Location Plans Sheet 5 of 5.

Historic Environment

ECC has engaged with HE to explore the Historic Environment and Conservation elements of the proposal and the proposed methodology for the assessment of the scheme. ECC has made a number of recommendations based on local experience and knowledge to improve the results of the proposed work as described in the scoping report and these are set out in Annex 1.

Landscape

Given the nature, location and scale of this project as well as the extension to the LTC route including land within the two tier area of Essex, ECC welcomes the opportunity to engage with the process and the development of the Landscape and Visual impact assessments.

It is recommended that the scope and extent of the assessments are re-considered to ensure the new northern section (beyond M25 Junction 29) is fully considered. ECC recommend that the Essex Landscape Character Assessment is taken into account, furthermore the assessments should take into account both the temporary and permanent implications of the proposal

Natural Environment

ECC is engaging with the Project and supports the use of nationally agreed guidelines for surveys and assessments to meet the requirements of both the Natural England Standing Advice, and the Essex Biodiversity Validation Checklist using Defra's biodiversity metrics, as well as CIEEM Guidelines for Ecological Impact Assessment (EclA) 2016.. ECC has identified additional matters, issues and opportunities in respect of ecology and biodiversity to be addressed by HE within the Scope and Environmental Statement (see Annex 1).

If you require further information or clarification on any points raised in this response please contact Gary McDonnell or Lesley Stenhouse and there details are set out below.

Yours sincerely



Andrew Cook
Director for Highways & Transportation

Encs

Annex 1 – ECC Schedule of detailed comments on the Scoping Report

Enc – ECC response to HE LTC consultation 24 March 2016

Enquiries to: Gary Macdonnell
Project Manager Commissioning Delivery
Gary.Macdonnell@essex.gov.uk
Or

Lesley Stenhouse
Principal Spatial Planner,
lesley.stenhouse@essex.gov.uk

ANNEX1 Lower Thames Crossing– ECC Schedule of Detailed Comments on the Scoping Report October 2017
 PROPOSED LOWER THAMES CROSSING

All comments relate to the Scoping Report (unless otherwise stated) and are presented by Service Area within the order of the Report

Highways and Transportation

Page / reference	Comments
<p>Section 1 Introduction 1.2.2 – Plate 1-1 The Strategic road Network in Context and the Location of the Dartford Crossing</p>	<p>Plate 1-1 the reference to “Southend Airport” on the map – should be amended to read “<u>London Southend Airport</u>” to correctly reflect the the name of the Airport.</p>
<p>Section 2 The Project 2.2 Alignment</p>	<p><u>Declaration of developments within 200m of the red line:</u> Please be advised that ECC declares the A127/B186 Warley Street Interchange immediately east of M25 Junction 29, as a planned highway improvement scheme for construction 2018/19</p> <p>Please be advised the emerging Brentwood Local Plan includes a Straetgic Employment Allocation at the M25, Junction 29, which is within both the permanent and temporary land requirements of the site boundary as defined in Appendix F: Figure 2.1 Application Site Location Plans Sheet 5 of 5.</p>
<p>Section 2.7 – Lighting 2.7.1</p>	<p>ECC welcome the proposal to include lighting on the new network and wish to be engaged with design as the project progresses including the scope, extent and design.</p>
<p>2.8 Technology –</p>	<p><u>Incident Management Strategy</u> In Section 2.8, the Scoping Report refers to the technology to be used for traffic management but the Scoping Report does not address an incident management strategy for the construction phase and the continual operation of the scheme. Incidents of whatever nature that could close or significantly disrupt any of the major routes, including the LTC link roads which could have a significant impact on the Essex network and environment. Incidents management plans should be developed early and ECC would like to be engaged and informed.</p> <p>ECC support the optimal use on advance warning by VMS, radio, live maps etc.</p> <p>ECC recommend that the scope of the Technology should include sufficient provision for future connected car ‘Vehicle to Infrastructure’ (V2I) technology.</p> <p>Future proofing – integrated transport, bus and coach trips ECC considers there to be an opportunity within what is essentially a strategic highways scheme to examine how</p>

	<p>opportunities for buses and coaches could be examined. The Thames is a natural barrier to movements by public transport and although bus and coach movements will largely be determined by operators, the crossing will undoubtedly be able to facilitate shorter distance trips between origins and destinations in north Kent and south Essex. If planned holistically this could reduce the use of the crossing for shorter car based travel, for example to work or in the course of business. The study should examine these opportunities with local authorities and public transport operators and this should be part of the Scope of the transport impact assessment undertaken. The study should identify what infrastructure requirements may be required such as ideas of local park and ride sites, bus infrastructure and interchange at local rail stations or near employment centres or town centres as well as bus priority. It would also be useful to establish which local origins and destinations could usefully be targeted. For example in conjunction with rail travel bus could provide the final or starting leg of multi-modal travel opportunities across the Thames. This whole topic is most important as the new crossing can be expected to generate new journeys a proportion of which may be quite short length trips.</p>
<p>2.9 Non Motorised User (NMU) Provision and 13.2</p>	<p>Sections 2.9 and 13.2 refers to non-motorised users, including cycling and walking, and ECC would like to be assured that these modes will be addressed in the design and that any potential severance will be addressed as envisaged in Section 2.9.</p>
<p>Section 2 2.13, Construction 2.14 Demolition & Land Take 2.17 Waste Management</p>	<p>With reference to Sections 2.13 Construction, 2.14 Demolition, and 2.17 Waste Management: ECC would wish to be informed and consulted on the construction traffic planning and management, as there could be significant impacts on the transport network during construction.</p> <p>This should also take into account the wider HE transport projects and other NSIP projects such as Tilbury 2 in the vicinity, for example with the construction period and therefore construction traffic clash with Tilbury 2 construction?</p>
<p>2.17 Waste Management</p>	<p>Section 2.17 Waste Management largely leaves the method of waste disposal undecided as potentially road, rail and or water transport. There could be significant local impact depending on mode of transport and if disposal sites are in Essex and /or Essex network used for transport of waste.</p> <p>Further information is required – please also refer to the our comments raised as the Minerals and Waste Planning Authority in Section 11 (Materials).</p>
<p>2.18 User Charging</p>	<p>Section 2.18 suggests that the user charging strategy has not been developed in much detail. Traffic demand and route choice on the Essex network could be significantly influenced by the chosen charging strategy and ECC would like to be fully informed and engaged in the development, implementation and management of a user charging strategy.</p>
<p>2.19 Traffic Forecasting</p>	<p>It is noted with concern that there is no dedicated “Transport Section” within the emerging PEIR. A specific and full Transport Assessment is essential to fully understand the potential impacts, mitigations and benefits on both the</p>

<p>Inc Plate 2-1</p>	<p>transport network and environment.</p> <p>ECC requires a full transport assessment to be undertaken to assess the impact of the LTC on the immediate south Essex highway network and the wider Essex highway network. This should also have regard to HE's own Transport Projects in Essex. This was a key aspect of our previous responses and ECC would expect the Scope to include and understand the following:</p> <ul style="list-style-type: none"> • The changes in route assignment from origins in central and north of Essex/East Anglia; • Key routes and junctions which may become under pressure such as A12, A127, A13; and junctions including routes involving M25 J27, 28, 29 and 30; M11 J6, 7 and 8; A127 all junctions in Essex, A13 Sadlers Farm (A13/A130), A127 Fairglen Interchange (A127/A130); A12 Howe Green junction (A12/A130); and • Mitigation where changes in route choice have a detrimental effect on performance <p>ECC wish to understand the sphere of influence within the Transport Model which should extend beyond the area shown in Plate 2-1 (page 24) to include the area around Colchester as traffic could be using the A12 to Junction 29, given the onward connectivity to Felixstowe, Suffolk and Norfolk areas.</p> <p>ECC would like to see the coverage extended to include at least the M11 north of Junction 9 (Stumps Cross) and to be assured that impacts on the M11 will be fully captured despite it being on the edge of the model. Details of the actual network is not shown, but ECC would wish to be assured that the model will include the following key routes: M11 (upto Junction 9), A12 (upto Junction 29) and the A13, A127, A128, A120, A130, A131 and A414 in their entirety (in both directions).</p> <p>It is essential that the designs adequately and safely accommodate forecast demands and that the forecasts cover not only forecast traffic flows but also environmental impact, including Air Quality, Noise and Vibration.</p>
<p>Section 13 – People and Communities 13.2 NPSNN Requirements – Accessibility and Severance</p>	<p>Section 13.2 refers to cycling and walking, but ECC would need to be assured that these modes will be addressed in the design and that any potential severance will be addressed.</p>

Minerals and Waste Planning

<p>Section 2 The Project 2.17 – Waste Management</p>	<p>Section 2.17 The Minerals and Waste Planning Authority (MWPA) welcome the positive statements made with regard to waste being managed in accordance with the Waste Hierarchy and the planned approach with regard to the re-use of contaminated land.</p> <p>Support is also given to paragraph 2.17.2, where it is stated that the Project “<i>will identify all wastes that are likely to be produced, the quantities likely to be generated and set out the approach for the control and sustainable management of excavated materials and waste from the construction, operation and maintenance of the Project</i>”.</p> <p>Landfill mining, reclamation or other such re-working are accepted as potentially being required to facilitate the preferred route of the LTC. Proposals for works which impact on closed landfill sites in Essex will be required to be in conformity with Policy 14 – Landfill Mining and Reclamation in the Essex and Southend-on-Sea Waste Local Plan 2017.</p>
<p>Section 11 Materials</p>	<p>The title of this Section does not fully reflect its Scope, the section should be renamed “<u>Materials and Waste Management</u>”</p>
<p>Section 11 Materials 11.2.5</p>	<p><u>Assessment of the expected Volume of waste arising</u></p> <p>The MWPA are pleased to note that the requirement of the NPSNN with regard to ensuring that there is sufficient waste capacity to manage waste volumes arising from the construction of the Project has been understood. It is therefore expected that the Environmental Statement will provide an assessment of the expected volume of waste arising from the Project and potential after-uses and disposal routes for this waste, as envisioned in para 11.2.5.</p>
<p>11.1.3;</p>	<p><u>Assessment of Expected quantity of Material Resources</u></p> <p>It is noted in Paragraph 11.1.3 that “<i>this chapter does not make reference to impacts associated with the offsite manufacture of products or the off-site extraction of primary materials. These stages of the products’ or material resources’ life-cycles are outside the scope of this assessment due to the range of unknown variables associated with the extraction and manufacturing processes</i>”. This is accepted.</p>
<p>11.7.2 &</p>	<p>The Methodology in Paragraph 11.7.2 further states that “<i>In respect of the assessment in relation to material resources, a specific study area has not been identified due to the whole market approach that will be used to procure material resources required for the Project</i>”.</p> <p>However, for such a large project, the Environmental Statement could present an understanding of the amount of mineral required for the project and likely sources of that mineral, particularly as the Statement identifies that the amount of waste arising from the project can be quantified. Should sufficient detail be available at this stage to quantify a mineral need, it would be useful to understand how the LTC may impact on productive capacity, annual sales and permitted reserves in relevant mineral planning areas. Such an assessment could conclude whether the LTC presents a basis from which to boost the permitting of mineral supply, as detailed in NPPF Para 145.</p>

<p>11.4.4</p>	<p>Paragraph 11.4.4 The following statement and the inference to be drawn, is not understood “As a specific study area has not been set for material resources as data for all material resources to be used is not available for the waste study area (Kent and Greater Essex). The quantitative assessment has been based on available material resources data for the UK”. It is further noted that the Study area identified excludes Thurrock and London - data from these waste and mineral planning areas must also be included as part of the baseline evidence.</p>
<p>11.4 Baseline Information Obtained - Material Resources Table 11-2</p>	<p>All information taken from the Greater Essex Local Aggregate Assessment has been updated by way of a later iteration of the report – available here (published October 2017).</p> <p>Table 11-2 (Aggregates Produced within Greater Essex, 2015) is incomplete. Appendix D of the EIA scoping report contains a version of Table 11-2 which was correct at the time, but which has since been updated in the Local Aggregate Assessment linked above.</p>
<p>11.5 Other Baseline information to be obtained</p>	<p>The Environmental Statement makes no mention of the possibility of reducing mineral miles by exploring the potential for borrow pits. The use of borrow pits to supplement the total mineral demand may result in the employ of more sustainable building techniques. Policy S6 of the Essex Minerals Local Plan 2014 sets out the basis upon which mineral extraction outside of Preferred or Reserve sites is assessed in the County.</p>
<p>11.4 Baseline Information Obtained - Waste</p>	<p>Waste data relating to Essex (which excludes Thurrock as they are a separate waste planning authority), which underpinned the recently adopted Essex and Southend-on-Sea Waste Local Plan can be obtained from the following documents: Waste Capacity Gap Update - December 2015 and BPP Paper on London Waste Imports Exports Issue.</p>
<p>11.7 Methodology 11.7.10 Future Baseline</p>	<p>Paragraph 11.7.10 states that: “As of 31 December 2011, the combined Thurrock and Essex updated landbank for sand and gravel was 8.3 years. Planning permissions secured on the preferred sites identified in the Essex Minerals Local Plan (ECC, 2014) will increase the permitted landbank which otherwise decreases through sales of the aggregates”. It is not understood why the December 2011 value has been reported. The latest figure presented in the LAA which informed the EIA Scoping Report is 7.35 years, which rises to 7.95 years in the October 2017 iteration. Given a statutory minimum of 7 years for the sand and gravel landbank, as mentioned above it, it is considered to be helpful if a quantification of mineral need could be ascribed to the LTC. This will assist in the forward planning of mineral release to ensure a steady and adequate supply of mineral for all development needs as well as conformity with NPPF paragraph 145.</p>

<p>11.7.16</p>	<p>Paragraph 11.7.16 quotes the “Essex County Council Capacity Waste Gap Report”, stating that: <i>“In line with the predictions of waste management capacity higher up the waste hierarchy, there would be a surplus of non-hazardous landfill capacity at 2031/32, if no further permissions are granted and all permissions that have secured planning permission become operational”.</i></p> <p>This capacity is not relevant, as the project is assumed to rely on inert landfill capacity rather than non-hazardous capacity. In respect of inert waste management capacity, as highlighted in the Essex and Southend-on-Sea Waste Local Plan, there is a predicted shortfall of inert landfill management capacity at the end of the Plan period (2032), equating to 7.05mt of CD&E waste should no new facilities come forward. Even when factoring in all relevant WLP allocations it is forecasted that there remains a significant capacity gap at the end of the Plan period.</p> <p>The assessment of the expected volume of waste arising from the LTC Project and potential after-uses and disposal routes for this waste, as envisioned in paragraph 11.2.5, will need to be clearly set out in light of the capacity shortfalls in Essex and Southend-On-Sea. This is of particular importance given the requirements of the NPSNN as articulated in paragraph 11.2.4</p>
<p>11.2.4 – 11.2.5</p>	

Lead Local Flood Authority – Flood and Water Management

<p>Section 14 Drainage and Water Environment</p> <p>14.9 Potential Mitigation Measures</p>	<p>ECC is the Lead Local Flood Authority (LFFA) in the two tier administrative area of Essex. The LLFA team has had initial meetings with HE’s representative looking at the drainage and flood risk for the LTC project and are satisfied that at this stage of the process that consideration is being given to the requirements of the development in relation to surface water drainage. ECC would expect the information relating to the drainage strategy for the scheme to be provided as standard and should be in line with ECC’s SuDS guide supporting documentation referenced in that document. If information relating to these criteria are supplied as part of the general strategy then we would not require additional consideration of surface water flooding issues to be addressed as part of an EIA report.</p> <p>However at this stage of the process ECC has significant concerns about the extent of the redline boundary that has been made publically available. It does not provide allowance for the provision of above ground attenuation features. This was raised during early discussions with water consultants. ECC is concerned that if the space required for these features is not accounted for at this stage of the process there will be limited scope to increase the extent of the development boundary at a later stage. This could lead to the implementation of a substandard surface water drainage system as part of a development that is significantly increasing the amount of hardstanding in a number of administrative areas, which could in turn increase flood risk or decrease water quality in these areas. The redline boundary should be amended to reflect initial discussions about spatial requirements to facilitate the delivery of a suitable drainage scheme.</p>
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Public Health and Well-being

<p>5 Environmental Impact Assessment Method 5.5.4</p>	<p>The Scoping Report reviews human health as part of the environmental impact assessment under regulations changed in May 2017 (Infrastructure Planning (Environmental Impact Assessment) Regulations 2017). There is little guidance available on what this definition means in practice, especially when looking at the wider remit of Public Health.</p> <p>The human health element of an environmental impact assessment (EIA) takes into consideration the impact of environmental issues derived from construction and operational phases of development. These are based around environmental health including biodiversity, air, land, noise and those traditionally associated with Public Health protection.</p> <p>ECC suggests that Public Health England (PHE), as the lead nationally for health protection, is made aware of this nationally significant infrastructure project (NSIP).</p> <p>At present, the scoping of the EIA human health element is very much focused upon the environmental impacts of this proposal on the population and environmental health has been consulted to provide their input and expertise. We very much support the inclusion of this to ensure that the health of our residents is protected.</p> <p>However, it is not clear what the assessment of the population in 5.5.4 will address as little detail is provided. ECC recommend that multiple issues should be included and ECC Public Health would be able to provide advice and signpost HE to the relevant data sources for this.</p>
<p>5.5.3</p>	<p>It is not clear how the proposal to divide human health throughout the various chapters as defined in in 5.5.3 page 56, will provide an overview of the overall health impact and this has the potential to not allow for a true assessment of the impacts on health from this development, if the impacts are not in a single form to be reviewed. As such, it is suggested that undertaking a health impact assessment (HIA) could make this assessment more robust as either a stand-alone assessment to compliment the EIA or integrated into the EIA in more detail.</p> <p>HIA address health impacts of development specifically and have the ability to incorporate the wider determinants of health. They are designed to ensure that both the positive elements of development are identified and subsequently optimised, whilst the negative impacts of health are recognised and mitigated against.</p> <p>HIA are supported by Local Planning Authorities across Greater Essex by the Essex Planning Officers Association. They are promoted as best practice and strongly supported by the Director of Public Health at ECC.</p>
<p>5.11.4</p>	<p>ECC welcome the proposal to incorporate an Equalities Impact Assessment into the report.</p>

<p>13 People and Communities 13.8.5 & 13.8.13</p>	<p>The project objectives of this report include considerations to the economy (to support local development, regional economic growth in the medium to long term). Public Health within ECC has a focus on employment and the health improvement and the positive impact upon wider determinants of health from this. We feel that there are many potential employment opportunities from the construction and operational phases including the actual development, supply chain and the wider economy as 13.8.5 and 13.8.13 (page 248/249). This supports ECC’s vision of helping the people of Essex prosper by increasing their skills and improving the health of people in Essex.</p>
<p>13.7.9</p>	<p>ECC recommend discussion with relevant authorities including ECC on the skills, education and employment opportunities that could arise from this proposal. ECC Public Health can contribute to these conversations and support 13.7.9 (page 244).</p>
<p>13.9.7</p>	<p>ECC is concerned with the potential severance issues for the local community that has been raised in paragraph 13.9.7 (page 251). At ECC we have some support that could input into this so that the movement, access and connectivity of our residents are not negatively impacted upon.</p>
	<p>Conclusions</p> <p>The EIA considers the health impacts from the environment to health. However, the elements of the development which could impact upon the wider determinants of health have not been included to the level that we would want to be considered including those to the economy.</p> <p>It is not clear how this will be achieved nor clear how this would be included as part of the proposed EIA. It is common for the wider determinants of Public Health to be addressed via a health impact assessment (HIA).</p> <p>ECC therefore recommends the following;</p> <ol style="list-style-type: none"> 1- Consider an HIA to either be integrated into the proposed EIA or as a stand-alone assessment. 2- The report will need to identify the duration of impacts of development on health and the wider determinants, in which phase they arise, whether they are positive or negative. 3- Consider advising PHE about this report so that they can provide advice, guidance and information on the health protection elements to human health arising from this proposal as required. 4- Speak with Directors of Public Health at authorities impacted upon by this development at the earliest opportunity so that they can advise on the methodology of any chosen report. 5- Speak with skills and employment teams at authorities impacted upon by this development so that they can provide support and increase the positive opportunities of these proposals with specific reference to 13.4.29 (page 241). 6- ECC have cycling support dedicated to infrastructure and we would advise that they could be contacted on this point so that residents can still move freely across the County and that connectivity is not negatively impacted upon.

Strategic Planning, Economic Growth, Regeneration and Skills

<p>Section 13 People and communities</p> <p>13.3.2 Consultations Undertaken and Proposed</p>	<p>The potential economic benefits of a new Crossing are significant and at this location there is the greatest potential for regeneration and job creation. The 'proposal' also has the potential to have a significant impact and opportunity on the local and wider area of South and Greater Essex in respect of businesses, economic growth, development and planning. It is recommended that wider engagement is undertaken</p> <p>Paragraph 13.3.2 sets out the scope of engagement with communities and businesses to date and we welcome the ongoing engagement with ECC. ECC also recommend that the following bodies are also directly engaged with this process, namely:</p> <ul style="list-style-type: none"> • All the South Essex Authorities collectively (Basildon BC, Brentwood BC, Castle Point BC, ECC, Rochford DC and the unitary authorities of Southend on Sea BC and Thurrock Council). The authorities collectively wrote to DCLG on the 9th November 2017, to accept an invitation to be a pilot scheme to prepare a "Statement of Common Ground" to support the preparation of a joined Strategic Planning Framework for South Essex. • Opportunity South Essex Partnership –the South Essex federated area of SELEP • DP World: London Gateway Port • Port of Tilbury Limited (there is a specific need to engage with the Port of Tilbury and their port expansion Tilbury2 an NSIP project - "Tilbury2" • London Southend Airport • Essex Chamber of Commerce • South Essex Growth Partnership • Haven Gateway Partnership
<p>13.4 Baseline Information Obtained/Surveys Undertaken</p> <p>13.4.9 Community and Private Assets</p>	<p>Paragraph 13.4.9 The paragraph should be amended to reflect the Thames Estuary Coastal path on the north side of the Thames from Grays to Southend on Seastates to read as follows: <i>"The England Coast Path is a new National Trail proposed to be complete in 2020; the Grain to Gravesend section in Kent and Grays Gravesend-to Southend section in Essex are both at an early stage of development."</i></p>
<p>13.4.28 Local and Wider Economy</p>	<p>Paragraph 13.4.28 ECC can advise that Paramount are no longer linked to the Theme Park development in Kent.</p> <p>In addition to the reference to the Theme Park development in Kent, parallel reference should also be made to the impending Purfleet Film Studios project, (part Thurrock Councils Purfleet Regeneration Scheme). It is also understood that the overall provision of planned commercial filming space has recently been increased above what was originally stated – and has potentially doubled, to close to 1 million square feet. It is considered that this should be taken into account, given the potential impact on the economic character and activity in the area and is due to commence in the next few years.</p>

<p>13.7 Methodology 13.7.8 – Development Land</p>	<p>The extension of the DCO route alignment to now include M25 Junction 28 and to extend northwards, now extends into the administrative area of ECC and Brentwood BC.</p> <p>It is noted that 13.7.8 takes into account Development Land, which includes adopted and emerging Local Plans as well as planning permissions and applications. Within the two tier administrative area in the vicinity of the M25 Junction 29 the respective adopted and emerging Local Plans & planning are:</p> <p>ECC – Minerals and Waste Planning Authority</p> <ul style="list-style-type: none"> • Essex Minerals Local Plan Adopted July 2017 • Essex and Southend on Sea Waste Local Plan – Adopted October 2017 <p>Please refer to the Minerals and Waste Planning section for further details.</p> <p>Brentwood BC – Local Planning Authority</p> <ul style="list-style-type: none"> • Brentwood Replacement Local Plan - Online Version Adopted August 2005 • Emerging Draft Local Plan Regulation 18 consultation March 2016 <p>It is noted that the Brentwood emerging Local Plan includes strategic sites allocations along the A127 transport corridor, including an emerging employment allocation “Brentwood Enterprise Park” at the M25, Junction 29. This emerging employment allocation includes part of the LTC’s permanent and temporary Land Requirements, as defined in Appendix F: Figure 2.1 Application Site Location Plans Sheet 5 of 5.</p> <p>ECC would welcome the opportunity to explore this matter further with both HE and Brentwood BC, to understand the wider implications and relationship with the emerging Brentwood Local Plan.</p> <p><u>Declaration of development s within 200m of the red line:</u> Further more, please be advised that ECC declares the A127/B186 Warley Street Interchange immediately east of M25 Junction 29, as a planned highway improvement scheme for construction 2018/19</p>
<p>13.7 Methodology 13.7.21 Local and Wider Economy Table 13-4: Spatial Scope For Assessment.</p>	<p>Paragraph 13.7.21 and Table 13-4: Spatial Scope For Assessment. ECC are considers the definition of the “Local Study Area” to extend to 200m from the application boundary to be insufficient given the nature and scale of this national project and the potential economic impact across Essex and South Essex.</p> <p>As indicated above, in our letter of 24 March 2017, ECC supported Location C in which the KPMG study in 2010, calculated that a new crossing at Location C could contribute £12.7 billion to the local economy. On this bases it is considered tha the Local & wider Study Areas in Table 13-4 should be expanded to include an assessment of the economic benefits/implications arising from the project and should include Brentwood BC as a host authority and the</p>

	<p>Basildon BC as a Neighbouring Authority.</p> <p>At present both Brentwood BC and Basildon BC are preparing their new Local Plans with strategic allocations, which include growth on the A127 Corridor and these too should be taken into account.</p> <p>The Wider Study Area should not be limited to the host Local Planning Authorities, it should be expanded to include ECC and all the Essex Authorities to reflect the the significance of this project on the national, regional and sub-regional transport network and sphere of influence, in the same manner the wider study area refers to the Greater London Authorities.</p> <p>The Wider Study Area Overall this is a national project which could have a significant impact on the region (both north and south of the river Thames) and the economic implications would spread much more widely than the local authority areas through which the route passes. Given the nature and connectivity to the LTC, including links to the A13, A127 and impact on the strategic road network it is considered that the local studay area should be expanded to reflect the wider Transport Model assessment, (see above) and but as a minimum it should incorporate both Brentwood and Basildon Borough Councils, with a view to expanding eastwards to take have regard to the London Southend Airport and Saxon Business Park in Southend BC /Rochford DC, and northwards to Chelmsford and Witham given the connectivity of A130 and A12.</p>
<p>13.7 Methodology and 13.8 Description of Possible Significant Effects on Receptors</p> <p>13.7.9 & 13.8.5 Local and Wider Economy and</p>	<p>Paragraphs 13.7.9 and 13.8.5: refer to the local and wider economy. Whilst it recognises the socio-economic impact, consideration should be made to entering into early discussions partners, such as SELEP and local authorities (including ECC), to develop a supplementary planning document to develop a local employment legacy, skills and training needs. The construction phase will see a number of skills pinch-points and early consideration and engagement is needed to address these skills and local labour challenges. This may include the need for investment in the local skills provision in order to address skills issues and develop a skills legacy.</p> <p>ECC would welcome the opportunity to explore this aspect with HE, to promote and develop the skills and employment required for these projects, having regard to the number of imminent HE schemes across the Essex area. This would benefit both HE and the residents and businesses in Essex.</p>

Historic Environment & Archaeology

<p>Section 7 Historic Environment</p>	<p>ECC has engaged with HE to discuss the Historic Environment and Conservation elements of the proposal and received an explanation of the proposed methodology for the assessment of the scheme. ECC have made a number of recommendations based on local experience and knowledge to improve the results of the proposed work as described in the scoping report.</p>
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	<p>The scheme will bisect a large area of very sensitive archaeological deposits and will result in the complete destruction of one Scheduled Monument. It will also impact on a number of listed buildings, including the probable demolition of 2 as well as impacting on a series of Conservation Areas. The scheme also bisects a range of geological sub-soils including the London Clay, sand and gravel terraces and the alluvium and marshland on the edge of the Thames. All of these can require different assessment methods and it is not clear from the present scoping documents that the Heritage consultants fully understand this.</p> <p>The following provides specific comments on the document provided.</p>
<p>7.3 Consultations Undertaken and Proposed 7.3.4</p>	<p>The heritage stakeholders identified should not be consulted in isolation. Any future meetings should, where possible, include all relevant heritage advisors.</p>
<p>7.4 Baseline Information Obtained/ surveys Undertaken 7.4.1</p>	<p>This should include any existing (as mentioned in 7.5.1) or emerging Local Heritage Lists which have yet to be adopted.</p>
<p>7.6 Key Environmentals Receptors and their Value</p>	<p>Tilbury Fort and Coalhouse fort as combined monuments forming defensive structures along the Thames should be viewed as Very High Value. This should be discussed with Historic England.</p>
<p>7.6.7 & Figure 7.1</p>	<p>This list is not exhaustive, for example The Grade II* Riverside Station is not included although is within the search area of Figure.7.1. It is accepted that this list will continue to evolve.</p>
<p>7.7 Methodology 7.7.4</p>	<p>It has been recommended that an initial survey a programme of aerial photographic rectification is undertaken as part of the desk based phase of work. This will then feed into the follow up stages of ground investigation.</p> <p>Applicants should also be using the Historic Environment Characterisation Work undertaken by ECC for the Thurrock area. They should also look at the work undertaken by Chris Blandford on Characterisation in the Thames Gateway.</p>
<p>7.7.6</p>	<p>It is considered that trial trenching should be used in its own right, not just related to geophysics. For those areas where geophysics cannot be used, a general trial trenching evaluation at 5% should be considered ZVI should be defined in conjunction with heritage consultees, to be in accordance with Historic England’s Advice Note 3.</p>
<p>7.7.8</p>	<p>The Local Authorities, as curators, should be undertaking monitoring visits to all of the sites investigated.</p> <p>Where possible the number of separate contractors should be kept to a minimum to ensure consistency of results. A consortium of large contractors has been successful on large scale projects in the past.</p>

ANNEX1 Lower Thames Crossing– ECC Schedule of Detailed Comments on the Scoping Report October 2017

7.7.10	There should be consideration to using side scanning sonar for the Thames. It is recommended that there is discussion with Wessex Archaeology, who may have already undertaken this for the London Gateway.
7.7.11	In addition to Noise/Traffic Impact, need to cross over with reports/analysis into associated lighting and potential light pollution. This can impact upon Cultural Heritage. It is recommended that Thurrock Councils Night Time Sky's data/resources are utilised.
7.7.14	Assessments should always assess the 'worst case scenario' for all elements of the proposed.
7.7.26	It would be more appropriate to discuss the terms of harm with all the specialist heritage advisors involved with the project and not just Historic England.
7.8 Description of Possible Significant effects on Receptors	In relation to changes in groundwater level, the project will especially need to assess the impact on the grazing marsh area and the potential heritage assets it contains.
7.8.3 Operation Scheduled Monument at A13 junction	Consideration needs to be given in any EIA for the appropriate recording of the scheduled monument at the junction with the A13 considering the extensive damage that will be caused. Consideration needs to be given to undertaking a total excavation of the scheduled area and associated elements of this nationally important complex.
Cumulative effects	Consideration needs to be given to the cumulative effect of the various developments on the link road (Tilbury II, New power station, Wood processing plant and the Lower Thames routes). How do these various developments impact on the designated assets within the Lower Thames Corridor?

Landscape

Section 8 Landscape	Given the nature, location and scale of this project as well as the extension to the LTC route including land within the two tier area of Essex, ECC welcomes the opportunity to engage with the process and the development of the Landscape and Visual impact assessments.
8.3 Consultations Undertaken and Proposed	It is recommended that the scope and extent of the assessments are re-considered to ensure the new northern section (beyond M25 Junction 29) is fully considered. ECC recommend that the Essex Landscape Character Assessment.
8.4 Baseline Information Obtained/Surveys Undertaken; and	The local Thurrock Landscape Capacity Study (2005), Land of the Fanns (2016) and Gravesham Landscape Character Assessment (2009) shown in the Landscape and Building Conservation Meeting 17/11/2017 document, have been used to determine the landscape character of the site, instead of the Essex Landscape Character Assessment (2002). This approach is suitable as the local studies are more up-to-date. However, reference should
8.5 Other Baseline	

<p>Information to be Obtained</p>	<p>also be made to the local assessments that have been influenced by the Essex Landscape Character Assessment (2002).</p> <p>The Zone of Theoretical Visibility (ZTV) shown in drawings ZTV CALCULATION NORTH OF RIVER THAMES DETAILED MAP HE540039-CJV-ELS-SNP_ENG0000000-DR-LE-00005,6,7,8,9,10 and 11 Revision P1.1 have been produced using 500m buffers, up to 2500m. However, the ZTV is still largely present at the 2500m boundary, it is therefore recommended that further buffers are added, possibly to 5000m. This will help decipher the extent of the ZTV and then further allocation of viewpoints.</p> <p>Because of this advice, ECC recommend that additional viewpoint locations are proposed based on the larger ZTV before recommending any further viewpoint locations in the area currently allocated. Due to the extent of the site and its intrusion in the landscape, it's crucial that locations at all buffer boundaries are provided. At present it appears that the viewpoints have only been allocated between 500m – 1500m, which isn't substantial.</p> <p><u>Addition recommendations</u> All documents supplied to ECC Place Services (HE540039-CJV-ELS-SNP_ENG0000000-DR-LE-00005, 6, 7, 8,9,10 and 11) were based on the finished site boundary/road layout.</p> <p>It is therefore recommended that further assessments are made for the areas that will be affected during the construction phase of the project. This includes:</p> <ul style="list-style-type: none"> • any areas that will be storage land for spoil, • excavation areas for balancing ponds and • material storage areas. <p>Assessments such as further ZTV calculations, landscape and visual impact assessments and site photography should all be provided for this construction phase. Whilst it is understandable that these areas may only be temporarily affected, however the impact will still influence a large expanse of the surrounding landscape and settlements for a considerable amount of time, and therefore it would be beneficial that impacts are assessed and mitigation where necessary, is proposed.</p>
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Natural Environment

<p>Section 9 Natural Environment</p>	<p>ECC wish to raise the following comments in respect of the Natural Environment within Scoping Report:</p> <p>Section 9.4 Baseline Information: identified the desktop assessment request (see also Appendix B) which includes both</p>
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<p>9.4 Baseline Information Obtained / Surveys Undertaken</p>	<p>the Essex Recorders Partnership (ERP) co-ordinated by Essex Field Club (EFC) and Essex Wildlife Trust (EWT) and covers designated sites (statutory and non-statutory eg Local Wildlife Sites), protected, priority (terrestrial and marine) and Schedule 9 species as these records should inform survey requirements. I note that the scope of the data search has already been discussed with Natural England with regard to the Zones of Influence for SSSIs, eg South Thames Estuary and Marshes SSSI, and the recommended Thames Estuary MCZ as identified on MAGIC website.</p> <p>There is however no information regarding the area to be covered by the data search which should cover a minimum of 1km corridor along the route of the new highway. Any records from any surveys undertaken should be provided to local records centres, eg EFC and EWT.</p>
<p>9.7 Methodology</p>	<p>Methodology: Section 9.7 provides details of survey and assessment (also Appendix C) which is to be undertaken to assess the impacts of this development on biodiversity. ECC supports the use of nationally agreed guidelines for these and other surveys and that all survey work should be undertaken in the appropriate season by appropriately qualified ecological consultants. Survey and assessment should meet the requirements of both Natural England Standing Advice, and the Essex Biodiversity Validation Checklist, using Defra’s biodiversity metrics, as well as CIEEM Guidelines for Ecological Impact Assessment (EciA) 2016.</p> <p>Surveys should include walkover surveys to inform further surveys on habitats and species, to include Priority habitats and both protected and Priority species, sufficient for the Secretary of State to discharge all associated statutory duties, including NERC s40. This should meet the EciA definitions of Important Ecological Features of local or greater importance for biodiversity and include terrestrial and marine environments. The assessment of likely ecological impacts needs to inform the evaluation of alternatives and incorporate effective and deliverable mitigation measures to minimise the impacts as well as identify compensation or offsetting requirements for any residual impacts.</p> <p>One seasonal constraint not obvious in the survey methodology for Arboriculturists surveying trees is foliage obscuring bat potential roost features (PRFs) during the summer months even from aerial surveys; this is best undertaken November-April so for any trees identified as being affected, this window should be used to improve the survey dataset for bats.</p> <p>A ‘Shadow’ Habitats Regulations Assessment (HRA) will be required to assess if the proposal is likely to result in an adverse effect on site integrity (either alone or in combination with other plans and projects) for the Natura 2000 sites within scope of the Part One Appropriate Assessment i.e. Thames Estuary and Marshes SPA and Ramsar site, North Downs Woodlands Special Area of Conservation (SAC) and Holehaven Creek potential SPA (pSPA). This is necessary for the Secretary of State to provide sufficient information for Natural England to consider this before the DCO is confirmed.</p>

<p>9.8 Description of Possible Significant Effects on Receptors</p>	<p>Potential Impacts: Section 9.8 provides details of the likely impacts and mitigation measures for this NSIP. It has the potential to have adverse effects on designated and non-designated sites as well as protected and priority species.</p> <p>This includes European Sites such as the Thames Estuary and Marshes SPA and Ramsar site and their qualifying features outside of the Natura 2000 site boundaries i.e. functional habitat, and others in Kent. Potential impacts include air quality on Ramsar vegetation and noise on birds on the SPA and the SSSI.</p> <p>It is also likely to affect Priority habitats e.g. brownfield (previously developed open mosaic), hedgerows and arable field margins, and both protected and Priority species (NERC s41), in particular farmland birds, especially skylark, given the route is across arable farmland habitat. The potential impact on all the relevant species and habitats must be effectively assessed and appropriate mitigation & compensation to minimise adverse impacts on health and the environment as agreed with DfT, and this should be included within the Scope. In delivering new schemes, the Government expects applicants to avoid and mitigate environmental impacts in line with the principles set out in the NPPF and the Government’s planning guidance.</p>
<p>5.2.2</p>	<p>Opportunities: ECC welcomes the statement in 5.2.2 that: <i>“additionally, during the EIA process opportunities to deliver enhancements will be explored in consultation with appropriate stakeholders as a mechanism to deliver net gain for biodiversity.”</i> This is in line with The NPSNN Paragraph 5.33 and reasonable opportunities to deliver environmental benefits as part of schemes are required under Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009. Opportunities for transport to contribute to the creation of coherent and resilient ecological networks are championed by Highways England’s Biodiversity Plan. Indeed the NPSNN also states that: <i>“When considering proposals the SoS should consider whether the applicant has maximised such opportunities in and around developments. The SoS may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered.”</i> A monitoring strategy is also supported with clear objectives outlined for those significant environmental effects that remain following mitigation. There will be opportunities to enhance parts of the site and in particular by creating Priority habitats such as hedgerows, to improve connectivity across the landscape particularly to mitigate for disconnections caused by the new road. ECC would expect the EclA to thoroughly explore all reasonable options to enhance the development for biodiversity including Protected and Priority species to support the HE Biodiversity Action Plan.</p>

Response ID ANON-F39M-AU85-2

Submitted to **Lower Thames Crossing Consultation**

Submitted on **2016-03-24 14:20:38**

About you

1 Name

Name:

Katrina Davies

2 Postcode

Postcode:

3 Email address

Email:

katrina.davies@essex.gov.uk

4 Are you responding on your own behalf or on behalf of an organisation or group?

Providing a response on behalf of an organisation or group

Crossing location

5 On balance, do you agree or disagree with our proposal for the location of a crossing, at Location C?

Strongly agree

Please provide the reasons for your response:

ECC strongly agrees with the proposal for a new Crossing at Location C, east of Gravesend and Tilbury. The reasons for this are:

Economic benefits – the economic benefits of a new Crossing at Location C are significant and this location has the greatest potential for regeneration and job creation. These benefits are of a substantially greater scale than expansion of capacity at Dartford can provide (see Table 1). A study undertaken by KPMG in 2010 calculated that a new crossing at Location C could contribute £12.7 billion to the local economy.

Network resilience – the provision of an independent crossing built to modern standards and suitable for all users will not only radically improve the resilience of crossing the Lower Thames but also the resilience of the strategic road network (SRN) between Kent, the Midlands/North and mainland Europe.

Strategic transport benefits – the Highways England consultation documents and other studies have shown that during incidents at Dartford, traffic diverts to other crossings (notably the Blackwall Tunnel) or the long way around the M25. Providing a suitable alternative crossing point, has the dual benefit of releasing capacity at Dartford and elsewhere on the SRN. The provision of a faster, more reliable route to the Midlands and North from the Channel ports will be particularly attractive to long-distance freight traffic and will have the benefit of diverting many of these journeys away from Dartford.

Location A Location C

New Jobs 17,000 25,000

New Homes 13,000 21,000

Table 1: URS Study Economic Impacts (2012)

Many other local authorities in Essex and the surrounding region agree that Location C is the best site for a new Thames river crossing. These authorities include:

- Basildon District Council
- Braintree District Council
- Brentwood Borough Council
- Castle Point Borough Council
- Chelmsford City Council
- Colchester Borough Council
- Epping Forest District Council
- Maldon District Council
- Rochford District Council
- Tendring District Council
- Uttlesford District Council
- Suffolk County Council
- Kent County Council

ECC has worked closely with the South East Local Enterprise Partnership (SELEP) and Essex Chamber of Commerce to establish support for location C. The following business focused groups agree Location C is the best site for a new Thames river crossing: SELEP

- DP World: London gateway Port
- Port of Tilbury
- Essex Chamber of Commerce
- South Essex Growth Partnership
- Haven Gateway Partnership

Location C is also the preferred site for a new Thames river crossing of a number of Essex MPs:

- John Baron MP
- Sir Simon Burns MP
- James Cleverly MP
- Robert Halfon MP
- Sir Alan Haselhurst MP
- Rt Hon Priti Patel MP
- Will Quince MP
- Rt Hon John Whittingdale OBE MP
- Douglas Carswell MP

Routes north of the river

6 There are three route options north of the river in Essex – Routes 2, 3 and 4. Where do you think the route should be located north of the river?

Route 3

Please provide the reasons for your response:

ECC strongly supports the proposed 'Route 3', connecting junction 1 of the M2 to the M25 between junctions 29 and 30. The reasons for this are:

Economic benefits – the 2012 URS study used Route 3 at location C as a base route. As indicated in Table 1 Route 3 supports the long term creation of an additional 25,000 new jobs and enables the construction of an additional 21,000 new homes over the reference case. Assuming the construction of Paramount Park, Option C supports the long term creation of an additional 32,000 new jobs and enables the construction of an additional 28,000 new homes over the reference case. This modelling has not been undertaken for routes 2 and 4.

Network resilience – the 2012 study indicated that Route 3 would reduce flows at the existing crossing by between 2% and 19% dependent on time of day and direction of flow (more generally about 10%).

Strategic transport benefits – Route 3 is the only option that provides a new strategic link between the Channel Ports and the Midlands and North and provides improved connectivity from Essex to these locations. Dependent upon the direction of travel and time of day 23% and 34% of travellers would chose to use a LTX at Route 3 rather than the existing crossing.

The latest modelling work undertaken by Highways England suggests there will be a ten minute reduction in journey time between junction 4 on the M2 and junction 28 on the M25 via Route 3.

Journey times between junction 3 and junction 28 on the M25 using the existing Dartford crossing would also be reduced by three minutes southbound and four and a half minutes northbound. Table 2 provides more information on the latest modelling.

Western Southern Link Assumed

Route 2 Route 3 Route 4

Estimated construction cost (nominal) £4.1bn to £5.8bn £4.1bn to £5.7bn £4.1bn to £6.2bn

Wider Economic Impacts £1.3bn £1.4bn £1.7bn

Adjusted Benefit Cost Ratio 3.6 3.5 3.3

Reduction in journey time between M25 junction 3 and junction 28 using the Dartford Crossing 3 mins (s/b) 4.5 mins (n/b) 3 mins (s/b) 4.5 mins (n/b) 3 mins (s/b) 5 mins (n/b)

Reduction in journey time between M2 junction 4 and M25 junction 28 using the LTX (location c) 9 mins 10 mins 9 mins

Route length 13.8 miles 13.3 miles 15.9 miles

Table 2: Highways England Modelling (2016)

Many other local authorities in Essex and the surrounding region agree that Route 3 is the best route north of the river for a new Thames crossing. These authorities include:

- Braintree District Council
- Brentwood Borough Council
- Castle Point Borough Council
- Chelmsford City Council
- Colchester Borough Council
- Epping Forest District Council
- Maldon District Council
- Rochford District Council
- Tendring District Council
- Uttlesford District Council
- Suffolk County Council

- Kent County Council

ECC has worked closely with the South East Local Enterprise Partnership (SELEP) and Essex Chamber of Commerce to establish support for Route 3 . The following business focused groups agree Route 3 is the best route north of the Thames for a new river crossing:

- SELEP
- Essex Chamber of Commerce
- Haven Gateway Partnership

Route 3 is also the preferred route north of the Thames for a new river crossing of a number of Essex MPs:

- John Baron
- Robert Halfon
- Sir Alan Haselhurst
- Sir Simon Burns
- John Whittingdale
- James Cleverly
- Priti Patel
- Will Quince
- Douglas Carswell

7 Thinking about the three route options north of the river, on balance do you agree or disagree with our proposal for each of these?

Q7 - Route 2:

Neither agree nor disagree

Q7 - Route 3:

Strongly agree

Q7 - Route 4:

Neither agree nor disagree

Routes south of the river

8 There are two route options south of the river in Kent – the Western Southern Link and the Eastern Southern Link. Where do you think the route should be located south of the river?

Western Southern Link

Please provide the reasons for your response:

ECC supports the Western Southern Link (WSL) as preferred by Kent County Council (KCC). This is not Highways England's proposed route. The reasons for this route choice are:

KCC's preferred WSL – in 2014 KCC commissioned work to design an alternative alignment because the DfT's indicative route in the 2013 consultation went centrally through Shorne Country Park. It is KCC's alignment that is referred to as the WSL in the 2016 consultation and therefore historically we have supported it.

Junction with the A2/M2 – the Eastern Southern Link (ESL) would terminate with the M2 at Junction 1. This is already a complex junction and using this will require a fourth level of slip roads on viaducts up to 23m high. The increase in complexity will also have possible safety implications and could lead to the whole junction locking up if there is an incident on one part of it. Conversely the WSL would create a new junction on the A2. Although this would require realignment of the A2, this could be completed with minimal disruption to the running of the A2.

Environmental impacts – the WSL would mostly be located outside of the Kent Downs Area of Outstanding Natural Beauty (AONB) whereas the ESL has a greater footprint within it, as well as impacting on the Great Crabbles Wood Site of Special Scientific Interest (SSSI) Both would have impacts on the area's heritage but the ESL would divide Shorne Parish and be in closer proximity to a number of listed buildings.

Traffic flows – the choice of WSL or ESL does not have a significant impact on the total volume of traffic using the Crossing but it does influence the distribution of traffic on the existing road network. The ESL tends to attract more HGV traffic but with the WSL more light vehicles would divert from Dartford. The ESL provides more relief to the A2 west of M2 Junction 1 and to the M20 at Maidstone, but puts significantly greater pressure on the M2 west of Junction 1 compared to the WSL.

SELEP are also in favour of the WSL.

9 Thinking about the two route options south of the river, on balance do you agree or disagree with our proposal for each of these?

Q9 - Eastern Southern Link:

Neither agree nor disagree

Q9 - Western Southern Link:

Strongly agree

The proposed scheme

10 Having evaluated the options, our proposed scheme is a new bored tunnel road crossing at Location C, following Route 3 north of the river and the Eastern Southern Link south of the river. On balance, do you agree or disagree with our proposed scheme?

Tend to agree

Please provide the reasons for your response:

ECC strongly supports the proposed 'Route 3', connecting junction 1 of the M2 to the M25 between junctions 29 and 30. The reasons for this are:

Economic benefits – the 2012 URS study used Route 3 at location C as a base route. As indicated in Table 1 Route 3 supports the long term creation of an additional 25,000 new jobs and enables the construction of an additional 21,000 new homes over the reference case. Assuming the construction of Paramount Park, Option C supports the long term creation of an additional 32,000 new jobs and enables the construction of an additional 28,000 new homes over the reference case. This modelling has not been undertaken for routes 2 and 4.

Network resilience – the 2012 study indicated that Route 3 would reduce flows at the existing crossing by between 2% and 19% dependent on time of day and direction of flow (more generally about 10%).

Strategic transport benefits – Route 3 is the only option that provides a new strategic link between the Channel Ports and the Midlands and North and provides improved connectivity from Essex to these locations. Dependent upon the direction of travel and time of day 23% and 34% of travellers would chose to use a LTX at Route 3 rather than the existing crossing.

ECC supports the Western Southern Link (WSL) as preferred by Kent County Council (KCC). This is not Highways England's proposed route. The reasons for this route choice are:

KCC's preferred WSL – in 2014 KCC commissioned work to design an alternative alignment because the DfT's indicative route in the 2013 consultation went centrally through Shorne Country Park. It is KCC's alignment that is referred to as the WSL in the 2016 consultation and therefore historically we have supported it.

Junction with the A2/M2 – the Eastern Southern Link (ESL) would terminate with the M2 at Junction 1. This is already a complex junction and using this will require a fourth level of slip roads on viaducts up to 23m high. The increase in complexity will also have possible safety implications and could lead to the whole junction locking up if there is an incident on one part of it. Conversely the WSL would create a new junction on the A2. Although this would require realignment of the A2, this could be completed with minimal disruption to the running of the A2.

Relationship with Gravesend – currently the majority of Gravesham Borough Council's (GBC) planned growth is to the west of the town centre but this new link to the SRN to the east of Gravesend could see development proposals put forward. The WSL would create a defined boundary that would limit urban expansion. The WSL is also an opportunity to enhance flood defences.

Environmental impacts – the WSL would mostly be located outside of the Kent Downs Area of Outstanding Natural Beauty (AONB) whereas the ESL has a greater footprint within it, as well as impacting on the Great Crabbles Wood Site of Special Scientific Interest (SSSI) Both would have impacts on the area's heritage but the ESL would divide Shorne Parish and be in closer proximity to a number of listed buildings.

Traffic flows – the choice of WSL or ESL does not have a significant impact on the total volume of traffic using the Crossing but it does influence the distribution of traffic on the existing road network. The ESL tends to attract more HGV traffic but with the WSL more light vehicles would divert from Dartford. The ESL provides more relief to the A2 west of M2 Junction 1 and to the M20 at Maidstone, but puts significantly greater pressure on the M2 west of Junction 1 compared to the WSL.

ECC has worked closely with local partners to gain support for a new Thames river crossing at location C following Route 3 north of the river. Supporting partners include:

- Braintree District Council
- Brentwood Borough Council
- Castle Point Borough Council
- Chelmsford City Council
- Colchester Borough Council
- Epping Forest District Council
- Maldon District Council
- Rochford District Council
- Tendring District Council
- Uttlesford District Council
- Suffolk County Council
- Kent County Council
- SELEP
- Essex Chamber of Commerce
- Haven Gateway Partnership
- John Baron MP
- Robert Halfon MP
- Sir Alan Haselhurst MP
- Sir Simon Burns MP
- John Whittingdale MP

- James Cleverly MP
- Priti Patel MP
- Will Quince MP
- Douglas Carswell MP

Junctions

11 We would welcome any comments you may have on our proposals for junctions.

Feedback on additional junctions:

Longer distance traffic using the new Crossing should remain on the Strategic Road Network (motorways and trunk roads) and not leak onto the Local Road Network which would cause traffic problems for ECC's roads. Therefore ECC requires more evidence before a judgement can be made on proposals for new junctions with the A13 and M25 capacity for which need to be fit for purpose. The reasons for this are:

- The new junctions will improve accessibility to Basildon, Southend and Chelmsford. It is likely that traffic on the A13 will increase as well as that on the local road network leading into the A13 including the A127. The Highways England modelling shows a decrease of around 3,100 vehicles per day on average using the A13 west of A1089 on opening year but it does not state what effect it will have east of the junction. No modelling demonstrating the effects on the local road network has been made available as part of the consultation material however this has been requested and we will be examining it closely once it is available
- Likewise, in the event of an incident at the junction with the M25 the alternative junction with the A13 will become the alternative route. It has not been demonstrated that the proposed junctions with the A13 can support forecast traffic flows and are future-proofed for growth.

This consultation, whilst it is focused on route options, also needs to consider the impact on existing junctions on the strategic road network. Where improvements are required as a result of the changing traffic flows created by the new Crossing then such improvements should be funded as part of the scheme to avoid future problems for the Highway Authorities. ECC has consistently argued for a number of wider network improvements and believes these must be delivered in conjunction with the LTX to mitigate current pinch points which would otherwise be exacerbated as follows:

- M25 J28 (A12 junction) - Clockwise flow from the A12 towards the crossing flows well. But anticlockwise traffic from the crossing accessing the A12 is constrained by the need to navigate a complex signalised roundabout. This must be addressed.
- A127/A130 (Fairglen junction) - Likely to see increased traffic flow from a lower Thames Crossing and is already a major bottleneck.
- A12/A130 (Howe Green junction) - Likely to see increased traffic flow from a lower Thames Crossing. This is a major bottleneck on the A12 and is urgently in need of major improvement.
- A127 (capacity improvements) - Likely to see increased traffic flow from a lower Thames Crossing and is already a major bottleneck.

Once a decision is made on the route for the LTX ECC would expect to see additional modelling on existing and new junctions for the M25, A12, A13, A127 and A130.

Any other comments

12 We would welcome any other comments you may have on our proposals

Text box for additional comments on proposals:

We think that it is essential that property owners, who may have already been blighted by the three proposed routes, are fully compensated for the loss of property value and inability to now sell if they need or want to move. We argue that this consultation has caused considerable distress in the local community and a swift decision on the preferred route option must be taken by Government following the consultation so as to minimise the uncertainty around the three potential routes through the community.

If Location C is chosen, irrespective of whether the western or southern link is built, there will be an improvement in air quality at Dartford on opening year owing to the forecast 14% decrease in traffic at the existing Crossing.

The Highways England modelling has shown that no residential properties will be at risk of exceeding air quality limits on any of the Location C routes. However, full modelling will be carried out at the next stage of project development.

For noise impacts the modelling has shown a net benefit as properties close to roads where traffic flow will decrease will have a reduction in noise levels but those in the vicinity of the new road or roads where traffic volumes will increase will have likewise experience an increase in noise levels.

The proposed routes will have varying degrees of environmental impacts, most notably on Schedule Ancient Monuments; landscape and the Greater Thames Marshes Nature Improvement areas. It is recommended that the next stages and further assessments should seek to minimise the environmental implications, whilst promoting environmental mitigation, compensation and enhancement, such as biodiversity offsetting and green infrastructure. Further detailed comments shall be provided on this basis with reference to ECC environmental policies and standards.

Finally, the Consultation Questionnaire asks for comments on the consultation itself. It is proposed that ECC will state:

- A range of technical information that is necessary in assessing the impacts of the proposed scheme and relative merits of the different routes has not yet been made available.
- A combination of signage, advanced information boards etc... pointing out the relevant live advantages of alternative route for the two crossing points and alternative routes to the north on the north side of the river and to the south and east on the south side of the river will be essential.

We welcome an ongoing conversation with Government and Highways England around the establishment and delivery of a preferred route.

Feedback on Consultation

13 How did you hear about the consultation? (Please select all that apply)

Other:

14 Do you have any feedback on this consultation – events, information provided, advertising, etc.?

Text box for further comments:

More about you

15 If you represent an organisation please complete all questions in this section.

Position in the organisation:

Senior Policy and Strategy Adviser (Place)

Name of the organisation of group:

Essex County Council

Please use the space below to provide further detail about your role or organisation:

16 What category of organisation or group are you representing?

Local government

Other:

More about you

17 How often, if at all, do you do personally you use the Dartford Crossing, either by driving or being driven?

Not Answered

Equality and Diversity

18 What is your gender?

Not Answered

19 Do you consider yourself as a person with a disability?

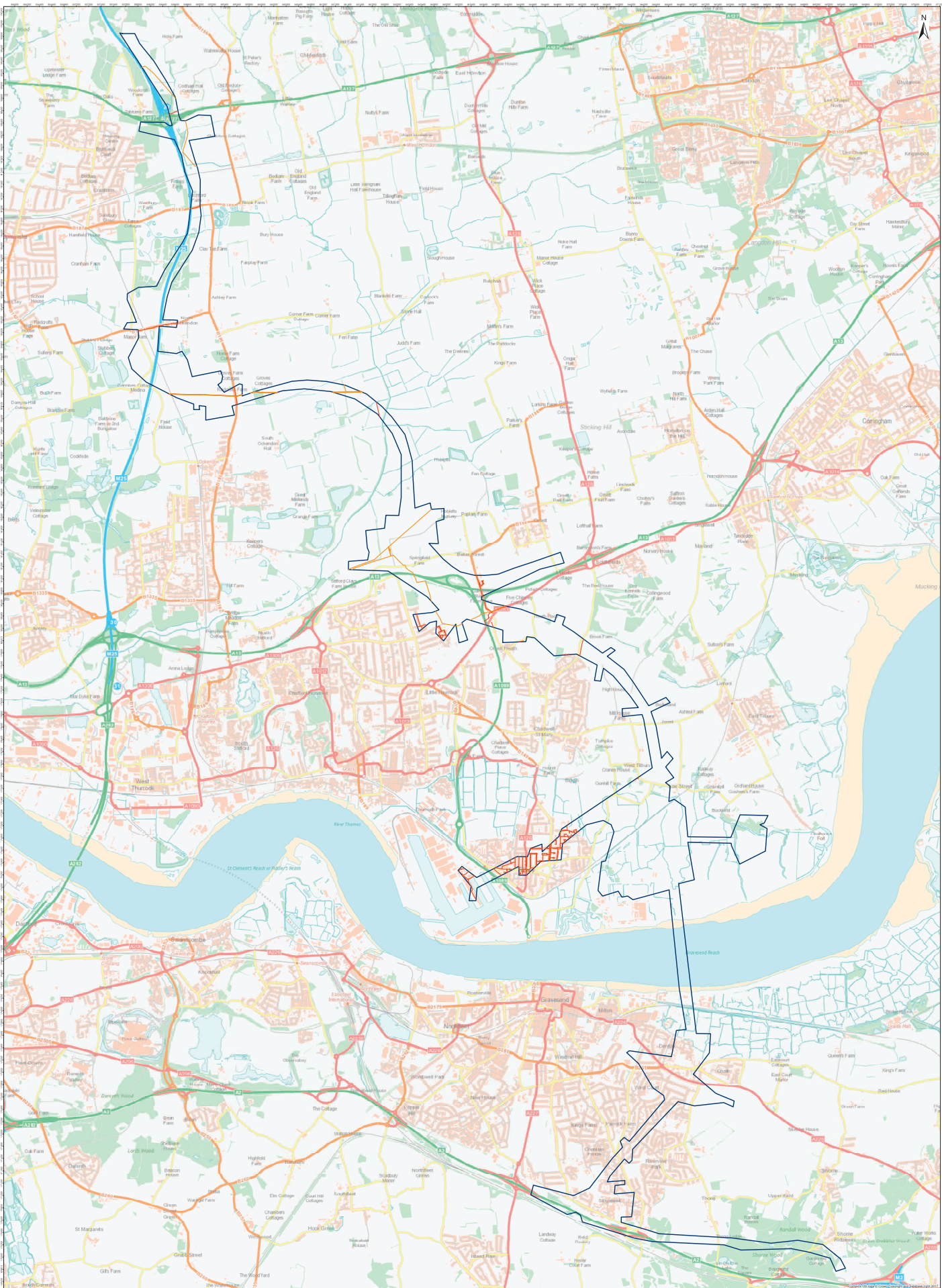
Not Answered

20 Please describe your ethnic background

Not Answered

21 Age

Not Answered



Legend	Color
County Boundary	Orange
Water	Blue
Major Road	Red
Minor Road	Yellow
Other Road	Green
Other	Grey

Legend	Color
Water	Blue
Other	Grey

Legend	Color
Water	Blue
Other	Grey

Legend	Color
Water	Blue
Other	Grey

Legend	Color
Water	Blue
Other	Grey

FISHER GERMAN
 Planning and Building Act 2000
 Planning and Building Act 2000
 Planning and Building Act 2000

Gail Boyle
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

South East & London Area Office
Bucks Horn Oak
Farnham
GU10 4LS

Tel: 0300 0674420
southeast.fce@forestry.gsi.gov.uk

01 December 2017

Area Director
Alison Field

Your Ref: **TR010032 - Lower
Thames Crossing - EIA
Scoping Notification
and Consultation**

Dear Ms Boyle,

Thank you for your consultation on the above scheme dated 03 November 2017 which was received by Forestry Enterprise via email on 03 November 2017 before being passed onto Forest Services.

The Forestry Commission's summary points are:

- Ancient Woodlands and Veteran Trees* are acknowledged as an irreplaceable habitat and a part of our Natural Heritage. It is not possible to mitigate against the loss of any irreplaceable habitat such as Ancient Woodlands, therefore, the Forestry Commission would recommend appropriate compensation of loss of ancient woodland at Claylane Wood at the appropriate ratio.
- Encourage wider mitigation of any loss of trees and woodlands within the project boundary.
- Compensation and the use of tree planting buffer to help enhance the resilience of neighbouring ancient woodlands.
- Encourage you to design the associate infrastructure (green space, woodlands, public footpaths and cycleways) to build on the evolving network of green infrastructure linking the Thames side towns to the adjacent countryside. There are a range of options for green infrastructure delivery and the Forestry Commission would draw your attention to what has already been achieved in just 10 years at Jeskyns¹.
- For the chosen option, the Forestry Commission would welcome the opportunity to provide advice at the appropriate time to ensure the most appropriate measures are adopted to minimise and / or compensate for the impacts on Ancient Woodlands.
- Locally sourced timber is used in construction of appropriate structures including sound baffles.

(*Note: Ancient Woodlands includes Ancient Semi-Natural Woodland (ASNW) and Plantations (including conifers) on Ancient Woodland Sites (PAWS).

The Forestry Commission is the Government Department that works with others to protect, improve and expand our nation's forests and woodland, increasing their value to society and the environment. As recognised in the Government's Policy Statement on forestry and woodlands (2013)²:

¹ <https://www.forestry.gov.uk/jeskyns>

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/221023/pb13871-forestry-policy-statement.pdf

“New and better managed woodland also has a role in making our rural and urban landscapes more resilient to the effects of climate change. Our objectives for sustainable woodland creation and management will improve woodlands’ resilience to climate change and other threats and enhance its contribution to wider climate change adaptation. Carbon will be sequestered through the growth of new woodlands. The wood products that are harvested from England’s woodlands will help to reduce greenhouse emissions from the energy sector directly as woodfuel and from other sectors where timber replaces more energy intensive materials. In addition, our focus on protection will help to ensure that we can safeguard the large store of carbon in England’s woodlands.”

The Forestry Commission is the Government experts on forestry & woodland and a statutory consultee (as defined by Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms And Procedures) Regulations 2009)³ for major infrastructure (Nationally Significant Infrastructure Projects (NSIPS)) that are likely to affect the protection or expansion of forests and woodlands (Planning Act 2008)⁴.

Forest Enterprise (FE) is the arm of the Forestry Commission that manages the public forest estate, ensuring that government policies and regulations are upheld through the management of these sites. Forest Services (FS) arm of the Forestry Commission is the government regulators, ensuring that government’s policies and regulations are upheld within the private sector. FS takes the lead on consultation responses for developments that are likely to affect the protection or expansion of all forests and woodlands. Where the public forest estate is likely to be impacted through development, FS would liaise closely with our FE colleagues as part of the consultation response submission.

The Forestry Commission’s response is based on information provided in the Highways England Lower Thames Crossing Environmental Impact Assessment – Scoping Report. This response highlights matters which should be resolved as part of the pre-application process. We believe that these issues should be addressed by the applicant as part of the examination and consenting process before development consent is granted.

9 Biodiversity

9.1 Introduction

The introduction has highlighted key policy and legislative documents that will be used in the Environmental Impact Assessment (EIA) scoping report. The Forestry Commission considers the relevant paragraphs and guidance notes outlined in the appendices with respect to considering biodiversity in planning decisions as being pertinent to any DCO and should be included in a report prepared for considerations.

In addition to the regulatory and policy framework outlined, the Forestry Commission considers the relevant documents and guidance notes outlined below as being pertinent to this DCO in relation to ancient woodland and veteran trees and should also be included in the report considerations.

³ <http://www.legislation.gov.uk/ukxi/2009/2264/contents/made>

⁴ <http://www.legislation.gov.uk/ukxi/2009/2264/schedule/1/made>

[The UK Forestry Standard](#) (4th edition published August 2017).

[National Planning Practice Guidance](#) – Natural Environment Guidance (Published January 2016)

[Our plan to protect and increase biodiversity](#) – Highways England biodiversity plan (Published June 2015)

[Standing Advice for Ancient Woodland and Veteran Trees](#) (Published April 2014)

[Government Forestry and Woodlands Policy Statement](#) (Published January 2013)

[Natural Environment White Paper “The Natural Choice”](#) (published June 2011)

[Biodiversity 2020: a strategy for England’s wildlife and ecosystem services](#) (published August 2011).

[Keepers of Time](#) – A Statement of Policy for England’s Ancient and Native Woodland (published June 2005).

[A Habitats Translocation Policy for Britain](#) – (published July 2003)

9.2 NPSNN Requirements

The Forestry Commission appreciates that, through assessing the relevant sections of the NPSNN report the Planning Inspectorate has drawn attention to the importance of biological and ecological conservation through avoiding environmental impacts in line with the principles set out in the government’s planning guidance. In addition to the paragraphs already outlined in the report, the Forestry Commission would also highlight the *Irreplaceable habitats including ancient woodland and veteran trees* section of the National Policy Statement National Networks (NPSNN):

Paragraph 5.32

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

9.4 Baseline Information Obtained / Surveys Undertaken

Nationally and locally important designated sites, habitats and species

This section outlines the desk study undertaken to inform the baseline to be listed as part of the EIA. The Forestry Commission welcomes the inclusion of Ancient woodlands

and individual veteran trees. As highlighted in the Natural Environment section of the National Planning Practice Guidance (NPPG) under Biodiversity and ecosystems⁵:

“Both Ancient Semi-Natural Woodland (ASNW) as well as Plantations on Ancient Woodland Sites (PAWS) are ancient woodland. Both types should be treated equally in terms of the protection afforded to ancient woodland in the National Planning Policy Framework.”

All ASNW, PAWS and ancient woodland areas should be included in the study area to:

- ensure these areas are treated equally in terms of protection afforded to ancient woodlands; and,
- to secure the future of one of the most diverse ecosystems in perpetuity.

As outlined in the NPPG, this will ensure these irreplaceable habitats continue to provide local ecological networks important for securing and enhancing ecosystem services including biodiversity, and for holding nature conservation value of the area.

9.5 Other Baseline Information To Be Obtained

Table 9-1: Proposed Terrestrial Ecology Surveys For EIA And HRA

Ancient woodlands and veteran trees are included in the list of protected species as highlighted on the Natural England website⁶. Ancient woodlands and veteran trees are irreplaceable and are considered important for their wildlife, soils, recreation, cultural value, history and contribution to the landscape. Therefore, Ancient Woodlands and veteran trees must be included in all future habitat* and species surveys in relation to the extended Phase 1 habitat survey within the application boundary of the Project. (*Note: When using a BS5837:2012 Cascade chart⁷ for tree quality assessment, ancient woodlands would automatically be classified as A3 due to their natural heritage and ecological value.)

Consideration must also be given to mixed broadleaved woodland, wood-pastures and parkland⁸. Under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006⁹, these habitats “are of principal importance for the purpose of conserving biodiversity.” Therefore, these woodland habitats must also be included in all future habitat surveys to ensure adherence to the requirements of the NPSNN report as outlined below:

Paragraph 5.25

“As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.”

⁵ <https://www.gov.uk/guidance/natural-environment>

⁶ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

⁷ http://www.flac.uk.com/wp-content/uploads/2012/09/Table-1_flac.pdf

⁸ <http://jncc.defra.gov.uk/page-1437>

⁹ <http://www.legislation.gov.uk/ukpga/2006/16/section/41>

9.6 Key Environmental Receptors And Their Value

Terrestrial Ecology

The Forestry Commission welcomes the inclusion of ancient woodlands as part of the terrestrial ecological assessment to ensure long-term viability or integrity of species populations or habitats and impacts are considered for further assessment.

Table 9-4: Nationally Important Ecological Features

In line with the NPPG, the Forestry Commission recommends that this table clearly defines the status of ancient woodland sites, to include ASNW and PAWS sites, veteran trees and woodland habitats recognised as a habitat of principal importance under Section 41 of the NERC Act 2006 are included in all survey work and study reports. This will ensure that a thorough assessment will acknowledge the impacts on any potential losses of irreplaceable and important habitats.

Due to the nature of ancient woodlands and veteran trees being an irreplaceable habitat, the Forestry Commission recommends that every effort is afforded to avoid this scheme affecting ancient woodlands or veteran trees. The Planning Inspectorate and developer should start by looking for ways to avoid the development affecting ancient woodland or veteran trees e.g. where possible, redesigning the scheme in line with the recommendations outlined in BS 5837:2012¹⁰. It is not possible to fully compensate for the loss or damage to ancient woodlands, thus compromising Highways England's aim to achieve no net loss of biodiversity by 2020 as set out in their strategy document: 'Our plan to protect and increase biodiversity' (Highways England 2015)¹¹.

9.7 Methodology

This section of the report outlines the assessments to be carried out to comply with the requirements of the NPSNN. The results of the assessments will be used to determine the potential significant impacts on important ecological features within the zone of influence of the Project. Where significant effects are considered likely, the assessment will present mitigation measure that may be required to avoid or minimise any significant adverse effect. The assessment will also consider cumulative effects. Forestry Commission would be pleased to work with the applicant to consider the impacts of other neighbouring developments such as the A2 Bean to Ebbsfleet improvements and the Ebbsfleet Garden City to maximise the environmental benefits that can be achieved by working in partnership. We would be pleased to advise further on these strategic opportunities to consider the cumulative impacts of all developments to consider biodiversity impacts at the wider landscape scale.

The Forestry Commission would also encourage the inclusion of measures to build the evolving network of green infrastructure to link the Thames side towns to adjacent countryside. This will aid the promotion of help encourage people to access the countryside by the local community for quiet enjoyment. There are a range of options for green infrastructure and the Forestry Commission would bring attention to what has been achieved at Jeskyns. Linking Jeskyns to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of landscape scale green infrastructure.

¹⁰ <https://shop.bsigroup.com/ProductDetail/?pid=000000000030213642>

¹¹ http://scate.org.uk/wp-content/uploads/2015/07/Highways_England_Biodiversity_Plan.pdf

9.9 Potential Mitigation Measures

The Forestry Commission acknowledge that the EIA scoping report has recognised that the final Scheme Option will result in the loss of Ancient Woodland at Claylane Wood. The Forestry Commission would welcome the opportunity to provide advice at the appropriate time to ensure the most applicable measures are adopted to minimise and / or compensate for the impacts on Ancient Woodlands.

As highlighted in the Joint Nature Conservation Committee (JNCC) Habitat Translocation Policy document¹²:

“Available information shows that it is not possible to move species assemblages without substantial changes taking place in the structure of the habitat and its species composition, thus rendering the translocation unsuccessful.”

Through a literature review of case studies to address environmental impacts of linear transport infrastructure on protected species and habitats, Edition 3 of the Natural England Commissioned Report (NERC 132)¹³ reiterates the message that “translocation of ancient woodland soils and coppiced stools does not imply that these methods mitigate the loss of ancient woodland.” and that “the measure should not be interpreted as a successful means of mitigating the fragmentation of ancient woodland; a resource which cannot be re-created through tree planting or habitat translocation due to its complex structure and wider-ranging biodiversity.”

In assessing these schemes, if the Planning Inspectorate decides to grant planning permission in line with the National Planning Policy Framework, it should seek appropriate compensation from the developer. As the government experts on forestry & woodland and a statutory consultee (as defined by Schedule 1 of The Infrastructure Planning (Applications: Prescribed Forms And Procedures) Regulations 2009) for major infrastructure (Nationally Significant Infrastructure Projects (NSIPs)), the Forestry Commission would welcome the opportunity to discuss with the developer options for addressing issues with regard to the Lower Thames Crossing NSIP.

The Planning Inspectorate should use planning conditions or obligations to secure compensation measures and subsequent ecological monitoring. The joint Standing Advice, prepared by Forestry Commission and Natural England, provides advice and the assessment tools to be used when assessing the impacts of the Lower Thames Crossing NSIP.

Where the impacts cannot be fully avoided, compensatory habitat provision will be required. It would appear appropriate for this to be delivered in conjunction with other projects such as the A2 Ebbsfleet to Bean improvements and the Ebbsfleet Garden City. The Forestry Commission will of course provide advice on impacts to ancient woodland outside of SSSI sites. For ancient woodlands within SSSI sites, we would provide advice alongside colleagues from Natural England as the scheme progresses towards the submission stage.

¹² http://jncc.defra.gov.uk/pdf/habitats_policy.pdf

¹³ <http://publications.naturalengland.org.uk/publication/6184646404472832>

Conclusion:

From the information supplied in the EIA Scoping Report, we advise that in respect of loss of any woodland, particularly the loss of irreplaceable and principally important habitats and ecosystems must be included in the test of public benefit to demonstrate accurately “that the substantial harm or loss of significance is necessary in order to deliver substantial public benefits that outweigh that loss or harm” as outlined in bullet point 7.2.6 of the EIA Scoping Report.

For the loss of any woodland, the Forestry Commission would ask:

1. To explore with you how this loss could be further reduced and how direct and indirect impacts on ancient woodlands can be minimised;
2. How best to target the creation of new woodland to compensate for the loss of trees and woodlands;
3. That the applicant engages with the Forestry Commission at the earliest opportunity so that our expertise can be used to support the development of options and design of the chosen way forwards.

Outlined above are the key areas of information would be required in order to allow the applicant to proceed with delivery of this scheme with least detrimental impact to the surrounding environment, and the Examining Authority properly to undertake its task or where further work is required to determine the effects of the project and/or to flesh out compensation proposals to provide a sufficient degree of confidence as to their efficacy.

Forestry Commission’s headline points are that on the basis of the information submitted, if approved, the project must be subject to all necessary and appropriate requirements which ensure that unacceptable environmental impacts either do not occur or are sufficiently compensated, as proposed in the proposed Code of Construction Practice.

If you disagree with our recommendations for the above schemes, then please consult the Forestry Commission.

Yours sincerely,

Caroline Parker

Local Partnership Advisor
Forestry Commission - South East & London
Bucks Horn Oak
Farnham
Surrey
GU10 4LS

caroline.parker@forestry.gsi.gov.uk
+44 (0)300 067 4420 (Switchboard)
+44 (0)300 067 4424 (Direct)

Appendix 1: National Policy Statement for National Networks 2014

The National Networks National Policy Statement (NN NPS), hereafter referred to as 'NPS', sets out the need for, and Government's policies to deliver, development of nationally significant infrastructure projects (NSIPs) on the national road and rail networks in England. It provides planning guidance for promoters of nationally significant infrastructure projects on the road and rail networks, and the basis for the examination by the Examining Authority and decisions by the Secretary of State.

Chapter 1: Introduction

Purpose and scope

1.2 The Secretary of State will use this NPS as the primary basis for making decisions on development consent applications for national networks nationally significant infrastructure projects in England. Other NPSs may also be relevant to decisions on national networks nationally significant infrastructure projects. Under section 104 of the Planning Act the Secretary of State must decide an application for a national networks nationally significant infrastructure project in accordance with this NPS unless he/she is satisfied that to do so would:

- *lead to the UK being in breach of its international obligations;*
- *be unlawful;*
- *lead to the Secretary of State being in breach of any duty imposed by or under any legislation;*
- *result in adverse impacts of the development outweighing its benefits;*
- *be contrary to legislation about how the decisions are to be taken*

1.3 Where a development does not meet the current requirements for a nationally significant infrastructure project set out in the Planning Act (as amended by the Threshold Order), but is considered to be nationally significant, there is a power in the Planning Act for the Secretary of State, on application, to direct that a development should be treated as a nationally significant infrastructure project. In these circumstances any application for development consent would need to be considered in accordance with this NPS. The relevant development plan is also likely to be an important and relevant matter especially in respect of establishing the need for the development.

Consistency of NPS with the National Planning Policy Framework

1.17 The overall strategic aims of the National Planning Policy Framework (NPPF) and the NPS are consistent, however, the two have differing but equally important roles to play.

1.18 The NPPF provides a framework upon which local authorities can construct local plans to bring forward developments, and the NPPF would be a material consideration in planning decisions for such developments under the Town and Country Planning Act 1990. An important function of the NPPF is to embed the principles of sustainable development within local plans prepared under it. 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.

1.19 However, the NPPF makes clear that it is not intended to contain specific policies for NSIPs where quite particular considerations can apply. The National Networks NPS will assume that function and provide transport policy which will guide individual development brought under it.

1.20 In addition, the NPS provides guidance and imposes requirements on matters such as good scheme design, as well as the treatment of environmental impacts. So, both documents seek to achieve sustainable development and recognise that different approaches and measures will be necessary to achieve this.

Chapter 2: The need for development of the national networks and Government's policy

Summary of needs

2.9 Broader environment, safety and accessibility goals will also generate requirements for development. In particular, development will be needed to address safety problems, enhance the environment or enhance accessibility for non-motorised users. In their current state, development, the national networks will act as a constraint to sustainable economic growth, quality of life and wider environmental objectives.

The need for development of the national road Network

2.16 Traffic congestion constrains the economy and impacts negatively on quality of life by:

- *constraining existing economic activity as well as economic growth, by increasing costs to businesses, damaging their competitiveness and making it harder for them to access export markets. Businesses regularly consider access to good roads and other transport connections as key criteria in making decisions about where to locate.*
- *leading to a marked deterioration in the experience of road users. For some, particularly those with time-pressured journeys, congestion can cause frustration and stress, as well as inconvenience, reducing quality of life.*
- *constraining job opportunities as workers have more difficulty accessing labour markets.*
- *causing more environmental problems, with more emissions per vehicle and greater problems of blight and intrusion for people nearby. **This is especially true where traffic is routed through small communities or sensitive environmental areas.***

Chapter 3: Wider Government policy on the national networks

Environment and social impacts

3.2 The Government recognises that for development of the national road and rail networks to be sustainable these should be designed to minimise social and environmental impacts and improve quality of life.

3.3 In delivering new schemes, the Government expects applicants to avoid and mitigate environmental and social impacts in line with the principles set out in the NPPF and the Government's planning guidance. Applicants should also provide evidence that they have considered reasonable opportunities to deliver environmental and social benefits as part of schemes. The Government's detailed

policy on environmental mitigations for developments is set out in Chapter 5 of this document.

- 3.5** Outside the nationally significant infrastructure project regime, Government policy is to bring forward targeted works to address existing environmental problems on the Strategic Road Network and improve the performance of the network. This includes reconnecting habitats and ecosystems, enhancing the settings of historic and cultural heritage features, respecting and enhancing landscape character, improving water quality and reducing flood risk, avoiding significant adverse impacts from noise and vibration and addressing areas of poor air quality.

Chapter 4: Assessment principles

- 4.3** In considering any proposed development, and in particular, when weighing its adverse impacts against its benefits, the Examining Authority and the Secretary of State should take into account:
- *its potential benefits, including the facilitation of economic development, including job creation, housing and environmental improvement, and any long-term or wider benefits;*
 - *its potential adverse impacts, including any longer-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.*
- 4.4** In this context, environmental, safety, social and economic benefits and adverse impacts, should be considered at national, regional and local levels. These may be identified in this NPS, or elsewhere.
- 4.5** Applications for road and rail projects (with the exception of those for SRFIs, for which the position is covered in paragraph 4.8 below) will normally be supported by a business case prepared in accordance with Treasury Green Book principles. This business case provides the basis for investment decisions on road and rail projects. The business case will normally be developed based on the Department's Transport Business Case guidance and WebTAG guidance. The economic case prepared for a transport business case will assess the economic, environmental and social impacts of a development. The information provided will be proportionate to the development. This information will be important for the Examining Authority and the Secretary of State's consideration of the adverse impacts and benefits of a proposed development. It is expected that NSIP schemes brought forward through the development consent order process by virtue of Section 35 of the Planning Act 2008, should also meet this requirement.

Environmental Impact Assessment

- 4.15** All proposals for projects that are subject to the European Union's Environmental Impact Assessment Directive⁵² and are likely to have significant effects on the environment, must be accompanied by an environmental statement (ES), describing the aspects of the environment likely to be significantly affected by the project. The Directive specifically requires an environmental impact assessment to identify, describe and assess effects on human beings,⁵⁴ fauna and flora, soil, water, air, climate, the landscape, material assets and cultural heritage, and the interaction between them. Schedule 4 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 sets out the information that should be included in the environmental statement including a description of

the likely significant effects of the proposed project on the environment, covering the direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project, and also the measures envisaged for avoiding or mitigating significant adverse effects. Further guidance can be found in the online planning portal. When examining a proposal, the Examining Authority should ensure that likely significant effects at all stages of the project have been adequately assessed. Any requests for environmental information not included in the original environmental statement should be proportionate and focus only on significant effects. In this NPS, the terms 'effects', 'impacts' or 'benefits' should accordingly be understood to mean likely significant effects, impacts or benefits.

Habitats Regulations Assessment

4.25 Where a development may negatively affect any priority habitat or species on a site for which they are a protected feature, any Imperative Reasons of Overriding Public Interest (IROPI) case would need to be established solely on one or more of the grounds relating to human health, public safety or beneficial consequences of primary importance to the environment.

Alternatives

4.26 Applicants should comply with all legal requirements and any policy requirements set out in this NPS on the assessment of alternatives. In particular:

- *The EIA Directive requires projects with significant environmental effects to include an outline of the main alternatives studied by the applicant and an indication of the main reasons for the applicant's choice, taking into account the environmental effects.*
- *There may also be other specific legal requirements for the consideration of alternatives, for example, under the Habitats and Water Framework Directives.*
- *There may also be policy requirements in this NPS, for example the flood risk sequential test and the assessment of alternatives for developments in National Parks, the Broads and Areas of Outstanding Natural Beauty (AONB).*

Criteria for "good design" for national network infrastructure

4.34 Whilst the applicant may only have limited choice in the physical appearance of some national networks infrastructure, there may be opportunities for the applicant to demonstrate good design in terms of siting and design measures relative to existing landscape and historical character and function, landscape permeability, landform and vegetation.

Climate change adaptation

4.37 This section sets out how the NPS puts Government policy on climate change adaptation into practice, and in particular how applicants and the Secretary of State should take the effects of climate change into account when developing and consenting infrastructure. Climate change mitigation is essential to minimise the most dangerous impacts of climate change, as previous global greenhouse gas emissions have already committed us to some degree of continued climate change for at least the next 30 years. Climate change is likely to mean that the UK will experience hotter, drier summers and warmer, wetter winters. There is an increased risk of flooding, drought, heatwaves, intense rainfall events and other extreme events such as storms and wildfires, as well as rising sea levels.

- 4.38** Adaptation is therefore necessary to deal with the potential impacts of these changes that are already happening. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change. When new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the provision of green infrastructure.
- 4.40** New national networks infrastructure will be typically long-term investments which will need to remain operational over many decades, in the face of a changing climate. Consequently, applicants must consider the impacts of climate change when planning location, design, build and operation. Any accompanying environment statement should set out how the proposal will take account of the projected impacts of climate change.

Chapter 5. Generic impacts

Overview

- 5.2** Sufficient relevant information is crucial to good decision-taking, particularly where formal assessments are required (such as Environmental Impact Assessment, Habitats Regulations Assessment and Flood Risk Assessment). To avoid delay, applicants should discuss what information is needed with statutory environmental bodies as early as possible.

Biodiversity and ecological conservation

- 5.20** Biodiversity is the variety of life in all its forms and encompasses all species of plants and animals and the complex ecosystems of which they are a part. Government policy for the natural environment is set out in the *Natural Environment White Paper* (NEWP). The NEWP sets out a vision of moving progressively from net biodiversity loss to net gain, by supporting healthy, well-functioning ecosystems and establishing more coherent ecological networks that are more resilient to current and future pressures. Geological conservation relates to the sites that are designated for their geology and/or their geomorphological importance.
- 5.22** Where the project is subject to EIA the applicant should ensure that the environmental statement clearly sets out any likely significant effects on internationally, nationally and locally designated sites of ecological or geological conservation importance (including those outside England) on protected species and on habitats and other species identified as being of principal importance for the conservation of biodiversity and that the statement considers the full range of potential impacts on ecosystems.
- 5.23** The applicant should show how the project has taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests.
- 5.24** The Government's biodiversity strategy is set out in *Biodiversity 2020: A Strategy for England's wildlife and ecosystem services*. Its aim is to halt overall biodiversity loss, support healthy well-functioning ecosystems and establish coherent ecological networks, with more and better places for nature for the benefit of wildlife and people. This aim needs to be viewed in the context of the challenge of climate change: failure to address this challenge will result in significant impact on biodiversity.

5.25 As a general principle, and subject to the specific policies below, development should avoid significant harm to biodiversity and geological conservation interests, including through mitigation and consideration of reasonable alternatives. The applicant may also wish to make use of biodiversity offsetting in devising compensation proposals to counteract any impacts on biodiversity which cannot be avoided or mitigated. Where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought.

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

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

5.33 Development proposals potentially provide many opportunities for building in beneficial biodiversity or geological features as part of good design.⁸⁰ When considering proposals, the Secretary of State should consider whether the applicant has maximised such opportunities in and around developments. The Secretary of State may use requirements or planning obligations where appropriate in order to ensure that such beneficial features are delivered.

5.36 Applicants should include appropriate mitigation measures as an integral part of their proposed development, including identifying where and how these will be secured. In particular, the applicant should demonstrate that:

- *during construction, they will seek to ensure that activities will be confined to the minimum areas required for the works;*
- *during construction and operation, best practice will be followed to ensure that risk of disturbance or damage to species or habitats is minimised (including as a consequence of transport access arrangements);*
- *habitats will, where practicable, be restored after construction works have finished;*
- *developments will be designed and landscaped to provide green corridors and minimise habitat fragmentation where reasonable;*
- *opportunities will be taken to enhance existing habitats and, where practicable, to create new habitats of value within the site landscaping proposals, for example through techniques such as the 'greening' of existing network crossing points, the use of green bridges and the habitat improvement of the network verge.*

Appendix 2: National Planning Policy Framework 2012

The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these are expected to be applied by Local Authorities within their Local Development Frameworks (LDF).

Achieving Sustainable Development:

Chapter 11: Conserving and enhancing the natural environment

109 *The planning system should contribute to and enhance the natural and local environment by:*

- *Protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *Recognising the wider benefits of ecosystem services; and*
- *Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.*

114 *Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.*

117 *Local planning authorities should set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure. To minimise impacts on biodiversity and geodiversity, planning policies should:*

- *Plan for biodiversity at a landscape-scale across local authority boundaries; identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;*
- *Promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; and, _ Aim to prevent harm to geological conservation interests; and where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.*

118 *When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:*

- *If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.*
- *Proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments)*

should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly

- *outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;*
- *Opportunities to incorporate biodiversity in and around developments should be encouraged; and,*
- ***Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and.***
- *the following wildlife sites should be given the same protection as European sites:*
 - *potential Special Protection Areas and possible Special Areas of Conservation;*
 - *listed or proposed Ramsar sites; and*
 - *sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.*

119 *The presumption in favour of sustainable development (paragraph 14) does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.*

Plan-making

Local Plans

157. *Crucially, Local Plans should:*

- *plan positively for the development and infrastructure required in the area to meet the objectives, principles and policies of this Framework;*
- *be drawn up over an appropriate time scale, preferably a 15-year time horizon, take account of longer term requirements, and be kept up to date;*
- *be based on co-operation with neighbouring authorities, public, voluntary and private sector organisations;*
- *indicate broad locations for strategic development on a key diagram and land-use designations on a proposals map;*
- *allocate sites to promote development and flexible use of land, bringing forward new land where necessary, and provide detail on form, scale, access and quantum of development where appropriate;*
- *identify areas where it may be necessary to limit freedom to change the uses of buildings, and support such restrictions with a clear explanation;*
- *identify land where development would be inappropriate, for instance because of its environmental or historic significance; and*
- *contain a clear strategy for enhancing the natural, built and historic environment, and supporting Nature Improvement Areas where they have been identified.*

Environment

165. *Planning policies and decisions should be based on up-to-date information about the natural environment and other characteristics of the area including drawing, for example, from River Basin Management Plans. Working with Local Nature Partnerships where appropriate, this should include an assessment of existing and potential components of ecological networks. A sustainability appraisal which meets the requirements of the European Directive on strategic environmental assessment should be an integral part of the plan preparation process, and should consider all the likely significant effects on the environment, economic and social factors.*

Appendix 2: National Planning Practice Guidance

As highlighted in the Natural Environment section of the NPPG under Biodiversity and ecosystems, the Forestry Commission consider the following sections to be relevant:

What are local ecological networks and what evidence should be taken into account in identifying and mapping them?

The components of an ecological network are explained at section 2.12 of the Natural environment white paper¹⁴.

Relevant evidence in identifying and mapping local ecological networks includes:

- *the broad geological, geomorphological and bio-geographical character of the area, creating its main landscapes types;*
- *key natural systems and processes within the area, including fluvial and coastal;*
- *the location and extent of internationally, nationally and locally designated sites;*
- *the distribution of protected and priority habitats and species¹⁵;*
- *areas of irreplaceable natural habitat¹⁶, such as ancient woodland or limestone pavement, the significance of which may be derived from habitat age, uniqueness, species diversity and/or the impossibilities of re-creation;*
- *habitats where specific land management practices are required for their conservation;*
- *main landscape features which, due to their linear or continuous nature, are important for the migration, dispersal and genetic exchanges of plants and animals, including any potential for new habitat corridors to link any isolated sites that hold nature conservation value, and therefore improve species dispersal;*
- *areas with potential for habitat enhancement or restoration, including those necessary to help biodiversity adapt to climate change or which could assist with the habitats shifts and species migrations arising from climate change;*
- *an audit of green space within built areas and where new development is proposed;*
- *information on the biodiversity and geodiversity value of previously developed sites and the opportunities for incorporating this in developments; and*
- *areas of geological value which would benefit from enhancement and management.*

How are ecosystems services taken into account in planning?

The National Planning Policy Framework states that the planning system should recognise the wider benefits of ecosystem services. Information about ecosystem services is in Biodiversity 2020: A strategy for England's biodiversity and ecosystem services¹⁷. An Introductory guide to valuing ecosystem services¹⁸ has also been published by Defra along with a practice guide, which could, where appropriate, inform plan-making and decision-taking on planning applications. The National pollinator strategy: for bees and other pollinators in England¹⁹ is a 10 year plan to protect

¹⁴ <https://www.gov.uk/government/publications/the-natural-choice-securing-the-value-of-nature>

¹⁵ <https://www.gov.uk/guidance/protected-species-how-to-review-planning-applications>

¹⁶ <https://www.gov.uk/guidance/protected-sites-and-areas-how-to-review-planning-applications>

¹⁷ <https://www.gov.uk/government/publications/biodiversity-2020-a-strategy-for-england-s-wildlife-and-ecosystem-services>

¹⁸ <https://www.gov.uk/government/publications/an-introductory-guide-to-valuing-ecosystem-services>

¹⁹ <https://www.gov.uk/government/publications/national-pollinator-strategy-for-bees-and-other-pollinators-in-england>

pollinating insects which support our food production and the diversity of our environment.

(Relevant to NPPF paragraph 109)

How can I find out whether an area is 'ancient woodland'?

A starting point to establish whether an area is ancient woodland is to look at the relevant ancient woodland inventory. These inventories comprise county maps of sites (generally greater than 2 hectares) that are thought to have been continuously wooded since 1600 AD. The national inventory²⁰ is published and updated by Natural England. Both Ancient Semi-Natural Woodland (ASNW) as well as Plantations on Ancient Woodland Sites (PAWS) are ancient woodland. Both types should be treated equally in terms of the protection afforded to ancient woodland in the National Planning Policy Framework.²¹

How can I find out whether trees that could be affected by a development proposal are 'aged or veteran' trees?

Guidance on the features and importance of veteran trees²² is provided by Natural England. Local Records Centres and other organisations with an interest in trees may be able to advise on the location of known veteran trees.

(Relevant to NPPF paragraph 118)

²⁰ http://www.gis.naturalengland.org.uk/pubs/gis/tech_aw.htm

²¹ <https://www.gov.uk/guidance/natural-environment#biodiversity-and-ecosystems>

²² <http://publications.naturalengland.org.uk/publication/75035>

Gayle Boyle
Senior EIA and Land Rights Advisor
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Planning Department
Ask for: Tony Chadwick
Telephone: 01474 337404
Email: tony.chadwick@gravesham.gov.uk
My ref: LTC/Scoping
Your ref: TR010032 - 000007
Date: 01 December 2017

By email

Dear Ms Boyle

Planning Act 2008 (as amended) and the Infrastructure Planning (Environmental Assessment) Regulations 2017 – Regulations 10 & 11

Thank you for your consultation on 3 November 2017 on the EIA Scoping Report for the proposed application by Highways England for an Order granting Development Consent for the Lower Thames Crossing. The Borough Council has carefully considered the scoping report and its response is attached. This is an officer level response endorsed by the relevant Members.

The Borough Council has consistently stated its opposition to Option C for the Lower Thames Crossing, but has approached the Scoping in a positive manner as required by the regulations.

The Borough Council would make the following overall comments:

- The scheme description and plans are unclear and it is therefore difficult to ensure that the possible impacts have been adequately covered
- The capacity of the scheme has not been made clear as required under the regulations
- That said the broad thrust of the scoping and methodology is sufficient though there are specific concerns in relation to air quality and the assessment of the significance of cultural heritage
- The approach to Habitats Regulation Assessment has to date been consistently deficient, and it is important when it is carried out the process considers all reasonable alternative options and is not artificially limited by previous decisions

If there any matters where further clarification is needed please get in touch.

Yours sincerely

A J Chadwick
Acting Planning Policy Manager

Switchboard 01474 56 44 22
Minicom 01474 33 76 17
Website www.gravesham.gov.uk

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TR010032-000007: Lower Thames Crossing

Comments on Environmental Impact Assessment Scoping Report

This document contains the comments of Gravesham Borough Council on the Highways England Environmental Impact Assessment scoping report issued by the Planning Inspectorate for consultation on 3 November 2017.

Response structure

This submission follows the chapter structure of the submitted Scoping Report. Within that the comments have been split between the key points and ancillary comments. This is preceded by a brief description of the Borough and a summary of the project description as it affects the Borough as currently understood. The latter is based on the Chapter 2 description but assuming the worst case from the information presented where the proposals are uncertain or options are discussed. There is also a glossary of local names for road junctions and other features to provide clarity.

In making this response the Borough Council had taken into account the relevant legislation, regulations and advice. In particular it has had regard to:

- The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations)
- The Conservation of Species and Habitats Regulations 2010 (as amended)
- National Policy Statement for National Networks – December 2014 (NPSNN)
- National Planning Policy Framework (NPPF)
- Development Plan policy as it relates to the proposal in Gravesham
- Design Manual for Roads and Bridges - 15 volumes, various dates (DMRB)
- Transport analysis guidance: Webtag – various dates (Webtag)

Contributions have been taken on board from a number of organisations in preparing this response, however the synthesis of these is Gravesham's and may not precisely reflect their formal positions. In formulating its response the Borough Council has approached the task as Local Planning Authority with a duty to consider all issues in the round and not as a series of discrete topic areas. Some of the text is additional information and advice to Highways England in taking the development of the proposal forward which arises from considering the scoping report.

Gravesham Borough

Gravesham Borough is located on the south bank of the Thames, just east of the Dartford Crossing. It has an area of 99 km² running up from the Thames to the crest of the North Downs. Gravesend/Northfleet (which includes part of Ebbsfleet) form the main urban area located in the north-west quadrant, with an industrial history in manufacturing, cement production and port uses as it is the first and last place on the River. The southern edge of the urban area is the A2, which is a 4 lane dual carriageway with hard shoulders. This passes to the east through the North

Downs AoNB to join the M2 and the A289 Wainscott Bypass. To the west in Dartford the A2 meets the M25/A282 to access the Dartford Crossing. HS1 runs along the same corridor before turning north west at Pepper Hill into the Ebbsfleet Valley, with Ebbsfleet International station and a link to Gravesend, before tunnelling under the Thames. The A226 provides a single carriageway link between Dartford, Gravesend and Strood closer to the river, whilst the A227 forms the main north-south link. The marshes east of Gravesend are Ramsar/SPA, an important habitat for wading birds. There are numerous other SSSI's and a small part of the North Downs Woodland SAC. The Borough contains 23 Conservation areas, 10 Grade I and 19 Grade II* listed buildings.

Project description in Gravesham

The Borough Council has prepared a summary of the proposed project in Gravesham on the basis of Chapter 2 of the Scoping Report and other information from discussion with Highways England and its consultants. This is to ensure the full scope of issues spatially and by subject matter is covered on the basis of a reasonable worst case scenario. As the project develops and the design is refined some elements may change or drop out – although others may get added in:

1. 3 lane dual carriageway with free flow grade separated junctions and a design speed of 70 mph joining M25 to A2
2. Twin bore tunnel with cut and cover approaches with a portal at Chalk (precise location to be determined but no further north than Lower Higham Road)
3. No A226 junction but will be a bridge over the tunnel approach
4. Deep cutting as Lower Thames Crossing road climbs at 4% under Thong Lane just to the east of urban Gravesend
5. A2 junction with 2 lane slips to/from east and west-bound carriageways – worst case would be 2 slip roads crossing each other above the A2
6. It is understood A2 on/off slips to/from coast-bound join the on/off slips for A289 (Wainscott Bypass) to create a 5 lane section or possible separate parallel highways
7. Marling Cross junction retains its A2 London-bound on/off slips but the coast-bound slips connect to/from the Lower Thames Crossing, not the A2.
8. Coast-bound there is a link road in the area between the A2 and HS1 from Henhurst Road to Thong Lane, which then connects via Watling Street to Brewers Road/Halfpence Lane roundabout. There is a slip road from Thong Lane north of the A2 onto the slip road from the Lower Thames Crossing linking to the A2 coast-bound. There is a connection off the westbound slip onto Lower Thames Crossing to the link road east and west.
9. It is understood that the Cobham junction is deleted as a result of the above arrangements
10. The tunnel portal will require a service building(s), pumping and possibly emergency access. It may also require a 25m high ventilation stack(s).
11. Need or otherwise to rebuild existing bridges on A2 unknown
12. Tunnel portal and cut and cover site will require a construction site at that location

13. If bored from southern side a much large site is likely to be required together with means of handling and disposing of spoil
14. Major construction site just south of Thong (24-operation)

The major changes compared with the plans (Western Southern option) consulted upon in January 2016 are 3 lanes rather than 2 for this section of the Lower Thames Crossing, the deletion of the A226 junction, the redesign of the A2 junction for higher speeds and the widening of the A2 further east, towards the M2. These changes and others north of the river in Thurrock have not been consulted upon.

General Comments

The project is attempting to thread a 70mph highway south of the River Thames through a highly complex and diverse environment with potentially major implications for people, biodiversity, landscape and the historic environment. The overall test will therefore be whether the claimed benefits warrant the inevitable damage the project will cause to people and environmental assets of acknowledged importance, whatever the final design, and whether there is a less damaging reasonable alternative that can secure similar benefits. The Environmental Impact Assessment is a vital building block in meeting that test and this scoping exercise is the means of setting out the questions that need to be asked and the methodology for obtaining the answers.

In this context the Borough Council welcomes that at this stage the EIA will cover all topics and nothing has been scoped out, except vibration from traffic on buildings (para 12.10.3) when complete.

Regulation 10 of the EIA Regulations says

- (3) *A request under paragraph (1) must include—*
- (a) *a plan sufficient to identify the land;*
 - (b) *a description of the proposed development, including its location and technical capacity;*
 - (c) *an explanation of the likely significant effects of the development on the environment;*
- and*
- (d) *such other information or representations as the person making the request may wish to provide or make.*

At the broad level the material contained within the Scoping Report adequately covers points (a) and (c) subject to the comments made below. The Borough Council does however wish to raise two issues in relation to point (b):

- The documentation does not contain an adequate description of the technical capacity of the scheme. For a road scheme it would be expected that this would be both in terms of maximum peak hour vehicle flows and maximum daily vehicle flows, ideally covering the main the scheme elements (main route/tunnel, slip roads, link roads and A2)
- The scheme description does not adequately describe what is being proposed with particular reference to the junction with the A2 and the consequential widening of the A2

back to the M2. Certain assumptions have been made but the comments have to be set in the context of this lack of clarity. The scheme description has been interpreted as a reasonable worst case.

As it currently stands, Gravesham is of the opinion that this scoping appears not to meet the requirements of Regulation 10(3)(b). Gravesham requests therefore that as a minimum the technical capacity of the tunnel is provided before the Scoping Opinion is issued. This is because the technical capacity is the worst case scenario against which environmental impacts should be assessed. This needs to be made clear within the Scoping Opinion to be issued.

Whilst the Scoping Report sets out in very broad terms where construction sites will be required and located, there are no indicative plans to show how they may be laid out or their scale. Given the constricted nature of the sites to the south of the river and proximity to residential areas and areas of high nature conservation value, this information should have been included.

As will be set out later in these comments, the heritage assessment follows DMRB guidance which is out of date in terms of the requirements set out in the NPSNN and relevant court decisions. Analysis on all topics should start from the basis of the NPSNN requirements not from any other guidance.

As Local Planning Authority the Borough Council is conscious of the need to evaluate the merits of the promoter's proposal in the round and not just for each topic area, also having regard to matters falling outside the direct scope of the EIA. There is a tension between the local costs and benefits, and those at a regional or national scale. Furthermore the scheme has to be judged as a whole, not just the element within Gravesham.

Results from the new transport model are not due to be made available until January 2018. As a result it has not been possible to highlight environmental issues that may arise when the wider local and regional traffic implications are understood.

As a result of these concerns the Borough Council may wish to make further representations should the scope of the project change significantly.

Chapter 3: Reasonable Alternatives

The text describes the options process that Highways England has gone through, leading to the Secretary of State selecting the current route corridor. Whilst what is set out may be sufficient for this scoping exercise, the Borough Council is strongly of the opinion that the work to date is insufficient to discharge the requirement to consider reasonable alternatives when it comes to the actual application. The reasons for this are as follows:

- The consultation on options undertaken between 26 January - 24 March 2016 prematurely discounted Route 1 (Dartford Crossing or route A in older terminology) in advance of any substantive work being undertaken in relation to Habitats Regulation Assessment (HRA). Whilst the EIA Scoping Report states that Route 1 (with bridge) was taken forward to the post-consultation stage (see Table 3 - 7), the 2016 consultation documents made it clear that

this was not being considered - even though the relevant Minister stated no decision had been made.¹ The consultation was therefore flawed and misleading.

- The fact that Highways England had not undertaken any substantive work in relation to HRA and a range of other qualitative issues not capable of being monetised under their WebTag methodology (i.e. key environmental issues including biodiversity, historic environment and landscape etc.) means that the decision making process was imbalanced. Indeed, the only consideration given to HRA within the 2016 consultation was a reliance on (unpublished) Counsel's advice that a bored tunnel at Route 3/Option C presented a lower consenting risk than a bridge or immersed tunnel after Highways England had discounted Route 1². The Post Consultation Assessment Report dismisses Route 1 primarily because it is claimed it fails to meet scheme objectives but that conclusion is challengeable particularly because the preferred option does not resolve the longer term issue at Dartford.³
- The 2016 consultation failed to properly consider Green Belt as a significant policy constraint in relation to the preferred option. In accordance with the WebTag approach, Green Belt was only considered as a landscape constraint and not a policy constraint whereby there is a presumption against inappropriate development that must be accorded significant weight unless there are material considerations that clearly outweigh harm. Whilst this is discussed further below, it too requires a consideration of reasonable alternatives irrespective of the requirements of EIA/HRA.
- Finally, much of Highways England's case that Route 1 should not be considered a reasonable alternative is based on its WebTag calculation of the relative Benefit Cost Ratios (BCR) of the options, with Route 3/Option C being considered high value for money and Route 1 low. This is questionable for a number of reasons⁴ and the Council would argue that given that socio-economic impacts form part of the EIA process, this aspect needs to be properly considered by the examining authority. We would also point out that Highways England only appeared to consider the options against a 'do nothing' baseline whereas it was inevitable that something would have had to be done at Dartford in the absence of the LTC option. In this respect, the additionality of Route 3/Option C over Route 1 in adjusted BCR terms is only 0.9⁵ – or poor value for money. The proper examination of reasonable

¹ See https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation/supporting_documents/Scheme%20Assessment%20Report%20%20Volume%201%20%20Executive%20Summary.pdf at 4.3.5 and 9.1.3. and https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation/supporting_documents/Scheme%20Assessment%20Report%20%20Volume%201%20%20Executive%20Summary.pdf

² See https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation/supporting_documents/Scheme%20Assessment%20Report%20%20Volume%207%20%20Appraisal%20Conclusions%20and%20Recommendations.pdf at 5.3.4

³ See Post Consultation Assessment Report vol 6 at https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation/supporting_documents/PostConsultation%20Scheme%20Assessment%20Report%20Volume%206.pdf

⁴ For example, much of the claimed benefits of improved infrastructure in this case relates to time savings. The monetised value of time is determined by willingness to pay. Aside from the fact that this component is made up of small slices of time that may have no actual value in terms of productivity, they do not come cost free given there is a need to pay crossing charges. It is unclear whether the cost of time saving has been deducted within the calculation. This means that there may have been double counting of the monetised value of time and revenues.

⁵ See Post Scheme Assessment Report vol 7 at https://highwaysengland.citizenspace.com/cip/lower-thames-crossing-consultation/supporting_documents/PostConsultation%20Scheme%20Assessment%20Report%20Volume%207.pdf .

alternatives therefore becomes important in weighing actual socio-economic benefits against environmental impacts – particularly if HRA is engaged and it is necessary to make an IROPI case. As noted above and elsewhere, it is also important in determining whether harm to Green Belt is clearly outweighed by other material considerations.

Having regard to the above, it is important that the EIA properly considers reasonable alternatives, whether they deliver comparable benefits (see for example NPSNN para 5.151) and weigh them against environmental impact. These must include alternative locations for a Thames Crossing as well as the design parameters (e.g. reducing the design speed to 50 mph). The analysis to date therefore has to be revisited in an open and transparent way. Given much of this work will also be needed to construct the Business Case required to support the DCO application, this is considered proportionate and entirely reasonable.

Whilst it does not relate exclusively to reasonable alternatives, we would also point out the policy requirement under NPSNN (at paragraph 5.205) that:

Applicants should consider reasonable opportunities to support other transport modes in developing infrastructure. As part of this, consistent with paragraph 3.19-3.22 above, the applicant should provide evidence that as part of the project they have used reasonable endeavours to address any existing severance issues that act as a barrier to non-motorised users.

In this respect, LTC is intended to improve river crossing for motorised users but the severance caused by the River Thames for others will remain largely unresolved. As this may have implications under the Equalities Act 2010, we consider that the EIA should set out how this will be addressed under the People and Communities chapter, consistent with the policy requirement above. In particular, we would draw attention to the fact that there is potential to improve facilities and service frequency/times for ferry users and that this could be subsidised on an on-going basis from LTC revenue streams. This would also provide an alternative to motorised trips, provide economic benefits by better integrating Gravesham and Thurrock, assist in reducing carbon emissions and environmental impacts, whilst freeing capacity on the crossing.

Chapter 4: Consultation

No comment in this context as this will be addressed through the Statement of Community Involvement.

Chapter 5: Environmental Impact Assessment Method

Subject to the comments made below, Gravesham is of the opinion that the overall approach is satisfactory.

Chapter 6: Air Quality

Table 7.1 shows an adjusted BCR for Route 1 of 1.11 and for Route 3/WSL of 2.01. The additionality therefore is an adjusted BCR of only 0.9.

Main points and comment

The A2 is an AQMA on the basis of current monitoring, and the background levels are generally high across the urban part of the Borough. Against the background of changing technical evidence on vehicles emissions and the implications for public health, there is serious concern about the effect of the introduction of a significant new source of pollution on the Borough (particularly at Marling Cross, Thong, Riverview Park and Chalk) as well as the impact on the existing AQMA on the A2 because of widening.

Analysis should be based on the latest version of the Emissions Factor Toolkit (currently November 2017) and any updates that may occur during the preparation of the EIA. It is noted that although nitrogen dioxide NO₂ and particulate matter PM₁₀ are to be modelled and monitored, there is a significant omission of PM_{2.5}, which should be included in the analysis. It is already included in the Public Health Outcomes Framework (PHOF) for Public Health purposes. This should also apply to the analysis of the regional implications (para 6.7.17).

Future pollution levels with the implications of electric or other technology along with self-driving vehicles are great unknowns. The base position should be an analysis based on the current trends and understanding and any allowance for potential future changes should be done as a sensitivity test.

As stated above, part of the route is within the A2 Trunk Road Air Quality Management Area, and measures should be taken to mitigate any adverse impact on this AQMA during both the construction and operation phase so that air pollution levels do not worsen in the existing AQMA and also so that its area does not need to be expanded. It is noted that 6.7.15 confirms that the impact on the AQS Objectives will be assessed.

The key test is whether air quality standards are breached at any point network.

Detailed Points

- 6.4.3 - local background monitoring data should be used if the data set shows monitored background levels to be higher than the national background mapping. Again, it would be useful for both to be used for comparison. Some additional monitoring locations are suggested:

Site Ref	Address	Site type	OS East	OS North	Pollutant	AQMA?
GR137	Lamp post opp. 2 Peartree Place Gravesend Road	Road side	570719	171143	NO ₂	No
GR138	Telegraph Pole Foxbury Manor Old Watling St Rochester	Road side	570583	169549	NO ₂	Yes
GR141	Telegraph Pole A2 Watling St Park Pale ME2 3UD	Road side	569588	169603	NO ₂	Yes

GR142	Light Post Inn on the Lake Watling Street Shorne DA12 3HB	Road side	567500	169836	NO2	Yes
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- 6.6.5 - consideration of the exposure of the vehicle occupants to air pollution should be made in relation to congestion particularly in cuttings and in the tunnel. Mitigation measures must then be included in the design to ensure their exposure does not exceed the EU Limit Values.
- 6.7.4 - all reasonable steps should be taken to design the route, the road's construction and intrinsic design and construction so that there are no adverse impacts on any relevant receptor during the operation phase. It is noted that if the tunnels are bored from the south there are significant implications for the Chalk area and any access routes. The impact on the locality through the storage of spoil must be assessed and relevant mitigation measures implemented into the construction phase.
- 6.7.5 - disappointingly the Scoping Report states that if there are no sensitive receptors (such as residential properties, schools and designated sites) within 200m of the affected roads then the local air quality effect of the scheme can be considered not significant and no further air quality assessment is required. During heavy congestion, particularly with a high proportion of HGV/HDV vehicles in the queues this is likely to affect an area bigger than 200m. It may also cause breaches of the EU Limit Values. The Scoping Report makes reference to the EU Limit Values in 6.7.10, 6.7.11 and 6.7.16 and confirms that a Compliance Assessment will be undertaken to determine whether the Project will have an impact on compliance with the EU Air Quality Directive. All steps should be taken so as not to cause a breach of the EU Limit Values.
- 6.8.1 - there is reference to there being some potential for adverse effects during the construction phase and goes on to say that as these are temporary they will be minimised. However, the construction phase is 6 years, and as such the impact is long term, albeit that it may cease at the end of the construction phase. Six years is a significant amount of time and as such any adverse impact during the construction phase should be given due consideration and all reasonable steps should be carried out to mitigate these impacts as far as is possible.
- 6.9.5 - Air Quality monitoring should be continued indefinitely after the opening year so that the local authorities, the public and Highways England are aware of the impact on nearby residents and areas of importance e.g. SSSIs etc. and so that any areas of exceedance of the objectives and any AQMA boundaries are kept up to date.
- 6.9.5 - the provision of buffer zones along the length of the new road should be ensured so as to provide space for air quality mitigation, e.g. bunding, this will assist in the mitigation of noise also. Bunding would also be a good use for left-over spoil.

Overall, Gravesham would expect any DCO to contain a provision that, should relevant Air Quality objectives and EU limits not be met, Highways England will implement mitigation measures to bring the project and its impact on the wider road network back into compliance. A commitment to this, together with a range of indicative measures, should be included in this chapter of the EIA.

Chapter 7: Cultural Heritage

Policy in this regard is set out in the NPSNN at 5.120 – 5.142. The EIA Scoping Report proposes the methodology set out in the DMRB be used to assess impacts on the historic environment against these policy tests. The DMRB methodology set out in document HA/208/207 is now 10 years old, predates current national policy and is not entirely consistent with it.

The NPSNN is quite clear that World Heritage Sites, Scheduled Monuments, Grade I and II* Listed Buildings, Registered Battlefields, and Grade I and II* Registered Parks and Gardens should be treated as of equal status – i.e. they are all assets of the ‘highest significance’. Beneath these lie lesser designated heritage assets such as Grade II Listed Buildings and Conservation Areas, followed by non-designated heritage assets – albeit undesignated archaeological sites can in some instances be accorded greater significance according to their importance.

In contrast, the DMRB and the applicant’s EIA Scoping Report propose a different form of categorisation whereby (for example) only World Heritage Sites are categorised as being of the highest significance. This may have implications when it comes to determining whether the degree of harm is ‘substantial’ or ‘less than substantial’ and the policy test that applies when compared against the matrix set out in Table 7 – 9. It is suggested therefore that, if such a matrix is to be used, the ‘value’ or ‘significance’ of the heritage asset should properly reflect the categorisation used in the NPSNN.

In addition, the Borough Council has issues with the way in which ‘substantial’ and ‘less than substantial’ harm are defined at paragraph 7.7.26 of the EIA Scoping Report in the following way:

7.7.26 The NPSNN refers to the term ‘substantial harm’, which would be considered to constitute an effect of ‘very large adverse’ significance. ‘Harm’ would be considered to be an effect of ‘large adverse’ significance. Both terms and their application to assessment of this Project would be discussed in more detail with Historic England.

The assessment matrix at Table 7 – 9 to which this relates is reproduced below:

Table 7-9: Cultural Heritage Assessment - Criteria For Determining The Significance Of Effects

Value	<u>Very High</u>	Neutral	Slight	Moderate/ Large	Large/ Very	Very Large
	<u>High</u>	Neutral	Slight	Slight/ Moderate	Moderate/ Large	Large/ Very Large
	<u>Medium</u>	Neutral	Neutral/ Slight	Slight	Moderate	Moderate/ Large
	<u>Low</u>	Neutral	Neutral/ Slight	Neutral/ Slight	Slight	Slight/ Moderate
	<u>Negligible</u>	Neutral	Neutral	Neutral/ Slight	Neutral/ Slight	Slight
	<u>No Change</u>	<u>Negligible</u>	<u>Minor</u>	<u>Moderate</u>	<u>Major</u>	
<u>Magnitude of Impact</u>						

It follows therefore that, under the DMRB methodology, ‘substantial harm’ can only occur to those designated assets of the highest significance (i.e. those falling within the ‘very high’ or ‘high’ categories) and not designated assets of lower significance (i.e. grade II Listed Buildings or Conservation Areas etc.).

However, this does not accord with the policy principles set out in the NPSNN because it clearly recognises that there can be ‘substantial harm’ etc. to Grade II Listed Buildings or Grade II Registered Parks (NPSNN at 5.131). Whilst the weight that may be accorded their preservation will vary according to significance, the more rigorous test applicable to ‘substantial harm’ would still be triggered (NPSNN at 5.133).

The contention in 7.7.26 above that ‘harm’ only corresponds with ‘large adverse impact’ also appears at odds with the statutory duty imposed under s.66(1) and 72(1) of the Planning (Listed Buildings and Conservation Areas) Act 1990 that requires the decision maker to accord ‘considerable weight and importance’ to preserving and enhancing the significance of Listed Buildings and Conservation Areas.

Given the Courts have determined that ‘preservation’ in this context means ‘doing no harm’, less than substantial harm would still occur even where impact is considered to be only moderate or slight⁶. The statutory duty would still apply therefore in terms of the weight to be attached to this factor in the decision making process, as set out in the *Barnwell Manor* (2014) judgement⁷.

This also raises issues with the criteria used to assess magnitude of impact on built heritage assets set out in Table 7 – 7 reproduced below:

⁶ See *South Lakeland District Council v Secretary of State for the Environment* [1992] 2 AC 141

⁷ For the judgement of the Court of Appeal in the *Barnwell Manor* (2014) case see [http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWCA/Civ/2014/137.html&query=\(2014\)+AND+\(EWCA\)+AND+\(Civ\)+AND+\(137\)](http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWCA/Civ/2014/137.html&query=(2014)+AND+(EWCA)+AND+(Civ)+AND+(137))

Table 7-7: Cultural Heritage Assessment - Criteria For Determining The Magnitude Of Impact On Built Heritage Assets

Magnitude of Impact	Example
Major	Change to key historic building elements, such that the resource is totally altered
Moderate	Change to many key historic building elements, such that the resource is significantly modified Changes to the setting of an historic building, such that it is significantly modified and its significance is affected
Minor	Change to key historic building elements, such that the asset is slightly different Change to setting of an historic building, such that it is noticeably changed and its significance is affected
Negligible	Slight changes to historic building elements or setting that hardly affect it
No Change	No change to fabric or setting

An implication of these criteria is that change to the significance of a designated heritage asset caused by development within its setting could only be considered to have a 'moderate' impact. If this is then applied to Table 7 – 9, it would mean that development within the setting of an asset could only have a 'very large' impact on significance and represent 'substantial harm' if that asset was a World Heritage Site.

It is difficult to see how this is consistent with the approach set out with the NPSNN whereby it is accepted development within the setting of any designated heritage asset can affect its significance and there is nothing to say that this could not be deemed to constitute 'substantial harm'. It would also appear to be inconsistent with the more nuanced approach to consideration of impact on significance due to development within the setting of listed buildings set out in Historic England's GPA note 3: The Setting of Heritage Assets (2015).⁸

Whilst a determination of whether the impact of the proposed development on heritage assets will be 'substantial' or 'less than substantial' is a matter for professional judgement, it is clearly not helped by a DMRB derived methodology that appears dated, inconsistent with the NPSNN and recent case law. We would suggest therefore that this be revisited as it potentially 'downplays' the level of impact and may lead to the wrong policy test being applied.

This is particularly important because the policy test applicable under NPSNN paragraph 5.133 where 'substantial harm' is found requires the applicant to demonstrate (1) there is no reasonable alternative that will deliver similar public benefits and (2) that those benefits are substantial enough to outweigh the harm or loss. Whilst it related to the parallel policy test under NPPF paragraph 133, the judgement of the Court of Appeal in the *Ordsall Chord* (2016) case is useful in illustrating

⁸ See <https://content.historicengland.org.uk/images-books/publications/gpa3-setting-of-heritage-assets/gpa3.pdf/>

how the policy should be applied and the importance therefore of correctly determining whether harm is 'substantial' or 'less than substantial'.⁹

For the avoidance of doubt, should the proposal result in 'substantial harm' to heritage assets, we consider the options appraisal that has taken place to date does not satisfy the first leg of the test in NPSNN paragraph 5.133 set out above and that it will still be necessary for the applicant to demonstrate that there are no reasonable alternatives. This is because the work to determine the actual degree of harm to heritage assets has yet to be undertaken and factored into the decision making process.

As such, 'considerable weight and importance' cannot have been accorded their preservation and enhancement as required by statute. The existence of reasonable alternatives will therefore be a material consideration in this case, as is suggested by the judgment of the High Court in the *Saddleworth School* (2017) case¹⁰.

The Borough Council considers that the EIA should also recognise that the scale of the Lower Thames Crossing project means that it will impact adversely on a large number of designated and non-designated heritage assets. There is a danger that the form of analysis proposed itemises impact in terms of harm to individual assets and fails to consider the overall level of harm to the historic environment that is likely to be cumulatively greater. It has the potential therefore to impact adversely both directly and indirectly on the significance of multiple heritage assets and the way they are experienced. We would suggest therefore that any assessment of harm to significance caused during both the construction and operational phases should recognise this and the overall level of harm be up rated as a result¹¹.

In terms of specifics, this response concentrates on those heritage assets within the Borough of Gravesham only.

Whilst the applicant will be able to identify key designated heritage assets from the Kent Historic Environment Record¹², it is anticipated that those most directly affected will be those close to the proposed works on the A2/M2 and the main road to the Thames Tunnel. The impacts are likely to be different during the construction and operational phases, and it is unclear where construction compounds will be located or what they will actually do.

It is noted that the EIA will consider impact on designated and non-designated heritage assets within a 1 kilometre radius. Within this area, the Borough Council asks that particular consideration

⁹ For the judgement of the Court of Appeal in the *Ordsall Chord* (2016) case see [http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWCA/Civ/2016/444.html&query=\(2016\)+AND+\(EWCA\)+AND+\(Civ\)+AND+\(444\)](http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWCA/Civ/2016/444.html&query=(2016)+AND+(EWCA)+AND+(Civ)+AND+(444))

¹⁰ For the judgement in the *Saddleworth School* (2017) case see [http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWHC/Admin/2017/349.html&query=\(2017\)+AND+\(EWHC\)+AND+\(349\)+AND+\(\(Admin\)\)](http://www.bailii.org/cgi-bin/format.cgi?doc=/ew/cases/EWHC/Admin/2017/349.html&query=(2017)+AND+(EWHC)+AND+(349)+AND+((Admin)))

¹¹ This is consistent with WebTag guidance at Table 8 of Unit A3 where a 'large adverse (negative) effect' can be considered to occur where development has a moderate direct impact on or compromises the wider setting of multiple nationally or regionally significant historic environmental assets, such that the cumulative impact would seriously compromise the integrity of a related group or historic landscape/townscape. See https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/638648/TAG_unit_a3_envir_imp_app_dec_15.pdf.

¹² See <http://webapps.kent.gov.uk/KCC.ExploringKentsPast.Web.Sites.Public/>

is given to impact on the following key designated assets both individually and in combination in Gravesham:

A2/M2 Corridor in Gravesham

- Cobham Park (Grade II* Registered Park and Garden)
- Cobham Hall (Grade 1 Listed) and associated individually listed structures
- The Engine House, Cobham Hall (Grade II Listed)
- Parish Boundary Stone, Cobham (Grade II Listed)
- Romano British Villa and C19 Reservoir in Cobham Park (Scheduled Monument)
- The Mausoleum, Cobham Hall (Grade 1 Listed)
- The Mount (Grade II Listed)

Whilst the Mausoleum is over 1 kilometre from the A2, it sits in an elevated position and may be affected by increased noise and disturbance etc. and should therefore form part of the assessment. Reference should be made to the material contained in the conservation plan for the historic Cobham Park to understand the full significance of the asset (supplied to Highways England). Please note that the Parish Boundary Stone referred to above was relocated as part of the works associated with the construction of HS1 (Channel Tunnel Rail Link)

Lower Thames Crossing/Thames Tunnel

- Thong Conservation Area
- White Horse Cottage, Thong (Grade II Listed)
- Church of St Mary, Chalk (Grade II* Listed)
- East Court Farmhouse, Chalk (Grade II Listed)
- Filborough Farmhouse, Chalk (Grade II Listed)
- Barn to the North West of Filborough Farmhouse, Chalk (Grade II Listed)
- Granary at Little Filborough Farm, Chalk (Grade II Listed)

Please note that the Thong Conservation Area Appraisal (2017) is available on-line at <https://drive.google.com/file/d/0B3rpRo7SzRqdbnQ0Q2I0RjRnQ1k/view>

The Borough Council does not have an up-to-date 'local list' of undesignated heritage assets but would draw attention in particular to the significance of the London County Council development of smallholdings for ex-World War 1 servicemen at Thong and Church Lane, Chalk that took place the early 1920s. These are noted to be a rare survival within Historic England's *South East Farmsteads Character Statement* (2014)¹³. A series of photographs and other documents relating to the creation of the smallholdings are available at the London Metropolitan Archive¹⁴.

Whilst much of the land to the west of Thong and around the Riverview Park Estate (including the Cascades Leisure Centre) once formed part of the former Gravesend Airport (later RAF Gravesend) there is little evidence of this phase of land use remaining. The surfaced section of

¹³ This document is available on line at <https://content.historicengland.org.uk/images-books/publications/south-east-farmsteads-character-statement/se-farmsteads-guidance.pdf/>

¹⁴ The photographs dating from 1922 are available on line at <https://collage.cityoflondon.gov.uk/quick-search?q=shorne&WINID=1510994305660> (note that beyond page 1 the photos are of a London estate development).

footpath NS169 running from Michael Gardens to Thong is believed to be part of one of the perimeter roads and storage areas for aircraft dating from the wartime use of the site¹⁵.

It should be noted that there is a distant view of Cobham Church (Grade 1 Listed) when progressing southwards along footpath NS169 and it is likely therefore that the junction with the A2 and the tunnel approach road may impact upon its significance and how it is experienced as development within its setting. Whilst the distance between the site and Cobham Church exceeds 1 kilometre, this should be checked and evaluated within this part of the ES.

Advice on archaeological potential of the area affected by the project should be sought direct from Kent County Council and Historic England, to whom we would defer. It should be noted however that we have discussed this area of work with Kent Country Council and are of the view that a comprehensive approach should be taken to better reveal the archaeological context of the application site itself. A detailed LiDAR survey of the wider area and its interpretation as part of any archaeological report would assist in this respect.

We would expect part of the legacy of this project to provide a better understanding of how human interventions have shaped this area in the past, with a permanent record being provided using the Channel Tunnel Rail Link as an example of best practice. This should include a commitment to ensure that artefacts etc. are put on permanent display locally.

Whilst the intention to use viewpoints from the landscape work to inform the analysis of impacts on the historic environment is noted, those we have suggested to date were only selected with landscape in mind. Additional viewpoints will be needed to illustrate impacts on the historic environment and heritage assets and we will seek to agree these with the applicant's consultants as the project progresses. Longer distance views from Thurrock towards Chalk and Thong should also not be ignored given the LTC could be a highly conspicuous scar in the landscape affecting not only the setting of the AoNB but also some key heritage assets.

The development of a 3D computer generated landscape model to properly assess impacts would also greatly assist in this process.

Finally, we would expect the landscape and historic environment sections of the EIA to be closely aligned and to include a detailed analysis of the development of landscape form over time. In this respect, we consider that it is important to understand how the land in this area has been used in the past, sub-divided and farmed etc. given this may provide a range of options on how impacts can be mitigated in ways that are appropriate to and enhance the setting of identified heritage assets.

Detailed points

- 7.4.1 - the Historic Environment Record search already carried should be updated so that any new information which has been added will be taken into account.
- 7.5.1 - it is not clear from the scoping report which historic maps will be checked but it is essential that both the 25 inch and the 6 inch OS maps are checked as they were often surveyed at different times and include different features and, for the 25 inch, more detail. The OS surveyors drawing should also be checked together with any available estate or

¹⁵ See Historic England Pastscape website at http://www.pastscape.org.uk/hob.aspx?hob_id=1396012

other mapping such as for sewers etc. LiDAR data held by other bodies not just the Environment Agency should be consulted – Kent County Council holds data for part of the area.

- 7.6.7 - does not list all the Scheduled Monuments within the area of search in the Kent area e.g. bowl barrow in Ashenbank wood and cf fig 7.1.
- 7.7.6 - the Assessment phase should include preparation of a deposit model to consider the potential for significant archaeological remains or palaeoenvironmental evidence to be buried beneath alluvial or colluvial deposits. The model should be further developed through borehole and/or geophysical survey; Historic England is currently preparing guidance for deposit modelling which should be consulted.
- Assessment and fieldwork should be developed in the light of the resource assessment and research objectives of the Greater Thames Archaeological Research Framework and the emerging SERF. This is a rare opportunity to examine a transect across the Lower Thames and the research potential of the proposed mitigation work should be taken full advantage of.
- The Desk-based assessment and field evaluation should involve a Palaeolithic specialist where relevant.
- It would also be useful if the locations of contractors' compounds and any service diversions required could be assessed as soon as possible.'

Chapter 8: Landscape

Main points and comment

There is a lack of clarity in the scheme description of what is being proposed along the A2 corridor within the North Downs AoNB, or the layout of the A2 junction which affects the setting of the AoNB. It has therefore been necessary to assume a 5 lane A2 or similar, potential rebuilding of some overbridges, a link road from Marling Cross to Thong Lane and revised access arrangements arising from the deletion of the Cobham junction.

This corridor contains substantial landscaping from the construction of HS1¹⁶ and the widening of the A2 to 4 lanes, along with the separation of the existing carriageways.

Potentially, on the basis of the red line boundary, there could be severe disruption during construction and considerable damage to existing landscaping and planting. A worst case would be a hard-built form corridor of road and rail combined which is of much greater width (and therefore impact) than at present. It will be necessary to consider the combined impact of both the widened A2 and HS1. There is potential for significant reduction in tranquillity as a result of both construction and the final scheme

The scheme from the tunnel portal to the A2 has implications for the setting of the AoNB as well as the open landscape east of Gravesend and views from the North Kent Marshes and possibly from Thurrock. The cutting leading up to Thong Lane could be a white scar if it has steep sides with no seeding. Views of residents in Riverview Park, along Thong Lane and in the village of Thong could

¹⁶ Note that some of the landscaping feature exist to protect the railway from vehicles

be significantly impacted upon. At Chalk as well as visual intrusion the scale of any buildings at the tunnel portal (including any ventilation stack) could be significant in the flatter landscape. It is unclear if the scheme has any implications for Three Crutches/Strood residents.

The noise (chapter 12) part of the analysis deals with impact on receptors, but it is important to note that the impact of the scheme on tranquillity in such places as Jeskyns, Cobham Park and Shorne Country Park is also relevant. The biodiversity analysis will also have to examine the implications of noise on wildlife.

In overall terms the approach to landscaping assessment is appropriate technically. In some areas the geographical scope needs to be expanded. It is a subject area where the impacts appear to be major/highly significant.

Detailed points

- 8.2.1 - reference is made to local development plans and policies, but these do not seem to be referenced anywhere in the Scoping Report. Gravesham Local Plan Core Strategy, Gravesham Local Plan 1st Review saved policies, Kent Minerals and Waste Plan, and Kent Downs AoNB Management Plan are all of potential relevance to the EIA process – along with the relevant documents from other Local Authority areas.
- 8.2.6 – it is assumed that the analysis will start from the assumption that the whole route is lit (the A2 is already). Noise impacts will relate to the results of the traffic modelling, in a context where in the A2 corridor HS1 is already present
- 8.4.2 - it should be emphasised that parts of Cobham Park are open to the public (National Trust land including the Mausoleum) and the area round Cobham Hall (a school) is accessible on a restricted basis. Users of the Rochester and Cobham Golf Park Club and the Knights Place Farm riding stables are also relevant. The area south of the A2 therefore needs to be subject to as much analysis as the north. This is in addition to the PROW network and local routes like the Darnley Trail
- 8.4.3 - makes reference to the setting of AoNB north of the A2 but this also applies to the south at Jeskyns (Forestry Commission) which straddles the AoNB boundary.
- 8.7.1 – references to DMRB and IAN 135/10 need to be checked for consistency with the NPSNN, NPPF and the 2017 Environmental Regulations - all of which take precedence.
- 8.7.3 & 8.7.10 - design year 15 in winter should be included as well
- 8.7.5 - indirect impacts will need to include an assessment of the changes on the local road network and junction arrangements as a result of the proposals in terms of traffic, noise and disturbance. From the point of view of the North Downs AoNB as a whole this scheme has potential implications for a much wider area which will be clarified by the transport modelling.
- 8.8.1 & 8.8.2 - as result of the revised proposals there is likely to be a significant impact from the removal of existing vegetation with consequential impacts on the AoNB. The potential impacts of ash die back disease, given the number of trees of this species in this area, need to be included as this could significantly change the baseline.
- 8.7.8 – the ZVI should extend as far as is necessary and not be subject to an arbitrary 2km limit. It needs to take into account the height of structures (bridges, gantries etc.). This will need to be agreed with the Borough Council

- 8.9.1 – the possible need to reconstruct or modify existing bridge structures over the A2 could have significant further impacts.
- 8.9.1 & 8.9.2 – potential landscape impacts are a product of the current route choice and design parameters. For reasons discussed elsewhere both these elements will need to be reviewed. In particular reducing the design speed of the crossing to 50 mph would have major benefits in mitigating the impact on landscape and other features
- 8.9.1 & 8.9.2 – although mitigation is mentioned as should be the first resort, compensation should also be considered. As a result of HS1 (then Channel Tunnel Rail Link) the Cobham Ashenbank Management Scheme was set up with an endowment from the developer of £750,000 (1996 prices) which created a series of projects which delivered over £7m worth of work in the area because of the impact on the historic park.

Given the scale of the project and the need to fully understand impacts in this sensitive location, Gravesham is strongly of the opinion that the promoter should be required to commission a 3D computer generated landscape model of the project to evaluate landscape impacts and the effectiveness of mitigation over time. The need for this has already been raised in the Cultural Heritage section.

Chapter 9: Biodiversity

Main points and comment

Gravesham does not have 'in house' expertise in the area of biodiversity and would normally in such cases defer to the views of Natural England, the Kent Wildlife Trust and other specialist bodies such as the RSPB. However, there are a number of concerns with the proposed analysis of biodiversity impacts which will be set out below.

Impact on biodiversity is likely to be complex and involve different considerations during the construction and operational phases. These impacts are in themselves likely to be in-combination effects relating to direct habitat loss, hydrology/drainage, air quality, noise, light pollution and other forms of disturbance. Direct mortality is also likely to occur as animals and birds cross the trace of the highway and are attracted by light etc. Road kill is also likely to attract scavenger species that may themselves also be injured or killed.

Whilst this section concentrates primarily on designated habitats and protected species etc., the Council is surprised that there is not a reference to the general duty imposed by s.40 of the Natural Environment and Rural Communities Act 2006 to conserve biodiversity, which includes in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.

Similarly, the Council would expect the EIA to recognise identified biodiversity opportunity areas given consideration should be given to enhancements in these areas as part of any scheme of mitigation. It is understood that the potential habitat area shown on Figures 9.1 produced by Natural England is to be refined in 2018. Reference should also be made to the Greater Thames Marshes Nature Improvement Area (NIA), as this is a form of mechanism by which mitigation could be delivered.

Attention is also drawn to the Council's current approach toward the management of the marshes following the completion of the North Kent Bird Disturbance Report (2012) that looked at aspects of

recreational impacts and how they might be mitigated. This resulted in the introduction of a tariff on new housing development within 6km of the Ramsar/SPA to facilitate the implementation of measures set out in the Thames, Medway and Swale Estuaries – Strategic Access Management and Monitoring Strategy (2014)¹⁷. This approach and the imposition of the tariff have been widely supported on appeal as consistent with international obligations.

A major concern with the section on biodiversity is that it includes no reference to the science that underpins the assessment methodology or the justification for the extent of surveys areas. For example, impacts are likely to be different having regard to habitat and between species and, in terms of the latter in particular, no justification is provided for the specific area of survey identified in column 2 of table 9 – 1 (page 123)¹⁸.

In addition, whilst reference is made to the CIEEM and IAN significance guidelines in Table 9 – 7, no indication is given of the thresholds that will be used to determine what category will apply in relation to each habitat or species or the science that underpins those thresholds.

This becomes of particular importance when one considers the CIEEM ‘Guidelines for Ecological Impact Assessment in the UK and Ireland’ (2016) set out in relation to the precautionary principle at 5.36 that:

The evaluation of significant effects should always be based on the best available scientific evidence. If sufficient information is not available further survey or additional research may be required. In cases of reasonable doubt, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect should be assumed. Where uncertainty exists, it must be acknowledged in the EclA.

Turning to specifics, on the issue of air quality, no scientific justification is provided to limit the survey to within 200 metres of the application site. In terms of impact on habitat, Gravesham would expect the previous work undertaken by Jacobs in 2014 to be fully updated having regard to the theoretical capacity of the link and latest data on vehicle emissions and background air quality.¹⁹

Whilst the Jacobs work also only looked at a 200 metre zone, it should be noted that there will be a need to consider the implications of any system of tunnel ventilation including where such vents are located and how pollutants are dispersed – the Jacobs report specifically refers to the issue of ventilation at a number of points. The EIA should also clearly set out whether there is any scientific evidence of species specific air quality impacts and how these have been taken into account.

A thorough understanding of the impact of the project on the water environment (having regard to climate change) will be required. The impacts are likely to be different between the construction and operational stages. Dewatering is likely to have a direct impact on the Ramsar/SPA, where a

¹⁷ See <https://www.gravesham.gov.uk/home/planning-and-building/nature-conservation-and-landscape/thames-estuary-and-marshes>

¹⁸ On the general impact of roads on biodiversity see A.V. Kociolek, A.P. Clevenger, C.C. St Clair and D.S. Proppe – Effects of Road Networks on Bird Populations in *Conservation Biology* vol 25, no.2 p.241 – 249 and on noise, Catherine P. Ortega: Effects of Noise Pollution on Birds: A Brief Review of our Knowledge in *Ornithological Monographs* (2012), No 74, p. 6 – 22.

¹⁹ See Jacobs (for Department of Transport): Lower Thames Crossing – Comparative Air Quality Assessment of Options for the Lower Thames Crossing (May 2014).

water level management plan operates. The approach taken toward dealing with tunnel/surface water drainage during the operational phase will clearly also be important.

In terms of noise impacts on birds, it is of some concern that this is being limited to only 500 metres of the application boundary. Once again, noise impacts are likely to be different during the construction and operational phases, and could be species specific.

Gravesham has undertaken a literature review and found work undertaken in the 1980s on the impact of road noise on lapwing, black tailed godwit and redshank (Ramsar/SPA qualifying species) which indicated that the zone of influence could extend to around 1.8 kilometres and result in a 60% decrease in populations²⁰. A more up-to-date study from 1995 also shows that the zone of influence extends significantly beyond the 500 metre survey area suggested and that oystercatchers (another Ramsar/SPA qualifying species) may also be affected with a disturbance distance of around 3.5 kilometres.²¹

Similar longer range impacts have been found in relation to woodland bird species, albeit the reduction in population and breeding pairs was also found to be related to overall population size year by year and pressure to occupy poorer habitat affected by road noise.²²

What is of particular concern is that the above studies were considering road schemes that were of a smaller scale than the Lower Thames Crossing and would have had a lesser impact – i.e. the largest involved a two-lane dual carriageway with a maximum daily traffic flow of around 52,000 vehicles rather than a three-lane dual carriageway subject to far higher traffic loads and presumably noise levels.

Whilst the Lower Thames Crossing south of the river close to the Ramsar/SPA will be in cutting before entering the tunnel, this will not in itself eliminate adverse noise impacts. Indeed, one of the effects of the cutting may be that it funnels and amplifies traffic noise down towards the marshes. We would suggest therefore that the noise impacts of the new road and any associated plant and equipment needs to be acoustically modelled to establish the potential zone of impact on the internationally designated sites and the survey area set accordingly.

It should also be noted that our review of the literature has only identified research into the noise impact of some of the Ramsar/SPA qualifying species found within the affected area and that the science may not be there to properly consider all impacts. The ES should set out clearly where this is the case as the precautionary principle may be automatically engaged.

The impact of noise from the Lower Thames Crossing on woodland birds within the SSSIs adjoining the A2 etc. and the biodiversity of non-designated ancient woodland will clearly be more difficult to assess given existing high levels of traffic noise in the area. The EIA will however need

²⁰ See A.N. van Der Zande, W.J. Ter Keurs, and W.J. van Der Weuden: The Impact of Roads on the Densities of Four Bird Species In An Open Field Habitat – Evidence of a Long Distance Effect in *Biological Conservation* 18 (1980) p 299 – 321. Lapwing, black tailed godwits and redshank are all qualifying species found at the Thames Estuary and Marshes SPA – see Table 1 in LILEY, D. 2011. What do we know about the birds and habitats of the North Kent Marshes?: Baseline data collation and analysis. Natural England Commissioned Reports, Number 082.

²¹ See Rien Reijnen, Ruud Foppen & Henk Meeuwssen - The Effects of Traffic on the Density of Breeding Birds in Dutch Agricultural Grasslands. *Biological Conservation* 75 (1996) p. 255 – 260.

²² See Rien Reijnen and Ruud Foppen - The Effects of Car Traffic on Breeding Bird Populations in Woodland. IV. Influence of Population Size on the Reduction of Density Close to a Highway. *Journal of Applied Ecology*, Vol. 32, No. 3 (Aug., 1995), pp. 481-491

to attempt to distinguish between the existing baseline and any potential worsening caused by the new road.

Clearly, there are likely to be other impacts on biodiversity caused by the proposals, with potential severance of habitat being a major issue. This is likely to be a particular problem with small mammals, although roadside verges may provide additional habitat. Consideration needs to be given to how existing issues of severance caused by the A2 and any worsening of the situation due to Lower Thames Crossing can be addressed. The use of land bridges that can also accommodate non-motorised rights of way should be considered in this context.

Overall, Gravesham suggests that the EIA Scoping Report needs to clearly set out the most up to date scientific evidence in relation to the relevant impacts so that the approach both to survey and methodological analysis is fully transparent.

The EIA will need to clearly set out proposed mitigation measures and where these will be implemented to address particular issues. Should road noise be an issue, then consideration may need to be given to reducing traffic speeds below the proposed 70 mph. Gravesham would expect any DCO to contain a requirement to introduce mitigation (including a reduction in speed) should predicted thresholds and impacts be exceeded.

Consideration should also be given to the mitigation of residual impacts through on-going financial or other support for nature conservation measures under the s.106 agreement potentially through similar initiatives to the Greater Thames Estuary NIA

Given the ES is required to consider reasonable alternatives; Gravesham would expect to see an analysis of the potential impact of Route 1 (Dartford Crossing) on biodiversity that can be directly compared with the proposal. This will need to go beyond the simple statement to date that a bridge at Dartford may present a risk of bird collision and loss of functional habitat and provide (for example) a quantitative and qualitative assessment of impact on qualifying species at the SPA/Ramsar.

Detailed points

- Fig 9.1 – sheet 1 the unnamed ancient woodland at Three Crutches is Cole Wood now fragmented as a result of HS1, M2/A2 widening and the junction with A289 Wainscott Bypass

Chapter 10: Geology and Soils

Main points and comment

The underlying geology is chalk, with alluvium around the Thames and complex of London Clay, Thanet sands etc. in the Shorne/Cobham area. The latter caused issues with cutting slopes, and therefore widths, for HS1 due to stability issues and there are also some perched water tables. It is understood that a primary reason for the split carriageways on the A2 was for stability reasons. On the area from Cobham Services down to Chalk it has been found elsewhere in the area that the quality of the chalk can vary significantly over a very short distance. Detailed survey work is needed on the geology and ground conditions, and the consequences for the design of the scheme, at the earliest possible stage to ensure that the impacts are correctly assessed. This

happened with HS1, where significant alterations were required in the Cobham/Shorne area to what had initially been assumed.

The route crosses Grade 1, Grade 2 and Grade 3 agricultural land. NPSNN para 5.168 should therefore be applied. This needs to include the impact on farm viability.

Should the project result in the Southern Valley Golf Course being removed or replaced, the impact of this on agricultural land, soils and the viability of farm units will also need to be assessed. In the event of the golf course ceasing to operate in its existing position, the restoration of the site is also likely to be material. This needs to be considered through the EIA.

Detailed points

- Fig 10.9 sheet 1 – site of the former Gravesend airport is noted – see chapter 7: Cultural Heritage. Both Cobham North (site of) and South (in operation) services may be polluted from their use as petrol stations. North has been subject to remediation following its closure.

Chapter 11: Materials

Waste and minerals is primarily a matter for Kent County Council as Minerals and Waste Planning Authority. The source of materials for construction and the destination of spoil are of concern because of the transport implications and the knock on effect on local residents. It is difficult to specify the origins/destinations in a project that has not yet defined how it will be constructed, let alone what the options will exist in a few years' time. Some reasonable options as the volume and generalised location should therefore be assessed.

Chapter 12: Noise and Vibration

Main points and comment

The NPSNN specifically requires consideration of mitigation measures on any identified DEFRA Noise Important Areas (NIAs) which are identified in Figure 12.1 within Appendix F. NIAs come out of the EU Environmental Noise Directive which required Governments to address the management of environmental noise issues including major roads.

DEFRA has produced strategic noise maps with Noise Action Plans for identified major roads. Those plans include NIAs which are priority locations where it is predicted 'the 1% of the population that are affected by the highest noise levels are located'. NIAs must be considered first and there is a process whereby the noise making authorities (in this case Highways England) must consider these locations, consult noise receiving authorities (Gravesham) and advise on what further measures, if any, might be implemented in order to improve the management of noise.

The NIAs identified along the A2 in GBC have already been assessed in this way and so the subsequent EIA will need to report on this. It is also noted there is a further round of noise mapping due to be undertaken this year which will also be considered when the information is released.

Using 2012 data DEFRA (see <http://extrium.co.uk/noiseviewer.html>) produced some modelled maps of noise, which are due to be updated. For this work it is assumed that the equivalent will be produced based on actual readings and then projected forward on the basis of the flows emerging from the transport modelling (including the expected proportions of HGV's).

Gravesham would therefore ask that the EIA include both details of existing, and projected daytime and night-time noise levels at a selected range of sensitive receptors. Noise contour mapping both with and without mitigation measures in place to provide an indication of the severity and extent of area likely to be impacted upon by a worsening noise environment. As with air quality, any DCO should include a requirement that should noise levels exceed prediction to an unacceptable level, Highways England will be required to address the issue and provide additional mitigation – which may include a reduction in traffic speeds.

Detailed points

- 12.4.6 - it is noted Figure 12.1 presents indicative short and long term noise monitoring locations along the route again to be agreed with the LAs. It is noted in Gravesham there are 7 short term monitors and 2 long term monitors identified. The two long term monitors are located to the east of the proposed route further from more densely populated areas. There needs to be more long term measurement points on the western side of the route.
- 12.6.3 - welcome a commitment to agree receptors with Local Authority so as to provide a representative baseline including changes during the day and at weekends. It should be noted that Bluewater does, and London Resort if it is built may, create significant flows off peak.
- 12.6.9 - table 12.2 and Table 12.3 of the report provide information on operational and construction noise level triggers based on other large infrastructure projects. This approach is accepted.
- 12.7 - the report proposes separate construction and operational noise effects assessment methodologies which are accepted. It also identifies that certain operations (removal of spoil by barge) will take place on a 24 hour, 7 day a week basis. The report also identifies there could be further less localised noise impacts around management of on-site material in order to facilitate transportation and potential re-use. This should include the opportunity to transport material by rail or water to reduce the number of construction movements by road. If transport by water is found to be practicable then this may require either the construction of a new jetty, or the modification of an existing jetty located on the River Thames. The nearest rail facilities to the tunnel are the North Kent Line in Kent. These should be investigated to identify if there is an opportunity to transport material by rail. If this was identified as feasible then new rail head facilities may be required. Haulage routes to the railhead and jetty facilities would be required, as well as large storage areas next to the jetty or rail head facilities. The report commits to ensuring any such development will be fully assessed re dust as well as noise.
- 12.8.2 – previous experience with elsewhere in the Borough has shown that in chalk due to the fissure structure vibration can manifest itself in unexpected locations and distances from the source.
- Sect 12.9 - this will include low noise surfacing, noise barriers and measures to control and noise from sources like pumping equipment or ventilation equipment.

Chapter 13: People and Communities

Main points and comment

These have been subdivided as set out in Chapter 13 for clarity

Impacts on Community and private assets

The proposal results in the demolition of residential and commercial property, the former primarily at Marling Cross. Businesses are lost at Thong and impacts on the Inn of the Lake Motel, Boughurst Cottage (kennels and cattery) and Park Pale Farm are not clear, along with access to the Rochester and Cobham Park Golf Club. The Southern Valley Golf course is severed and proposals are needed as to its future since this could impact on future land use. Cascades Leisure Centre though not directly affected may suffer from increased disturbance from noise and poorer air quality.

Figure 13.1 contains a 1 km study area which should be treated flexibly depending on the specific topic and likely impacts. The theoretical exclusion of an area at Shorne Village is anomalous and logically Cobham village should be included. The amount of the urban area affected will be a product of the traffic impacts inter alia.

NPSNN para 5.206 requires that the transport implications be examined. Access routes will sufferer disruption from the new junction arrangements and the possible impact of significantly different traffic patterns on the strategic highway network. For non-motorised users see below. Given the convoluted proposals in particular the slip roads at Marling Cross, the traffic modelling (or other appropriate approach) should address the issue of how traffic flows across the Gravesend/Northfleet urban and rural area (for example A227) will change as a result, whether any highway improvements will be needed as a result, and the resulting potential impacts on local residents. The use of the various A2 junctions may change, all of which at peak are operating at the margins, with implications for traffic flow within the area. This may affect development sites. Given the regional scale of this project the same question clearly needs to be answered on a much large scale since the project inherently requires a redistribution of flows from the Dover and the Channel Tunnel away from the M20 corridor and onto A2/M2.

The physical implications for HS1 from the current proposals are unclear. As a high speed (186 mph) railway carrying domestic and international services it has its own safeguarding zone which is in the process of being revised, but which overlaps with the red line boundary for this project. As well as the railway itself there is the Singlewell Feeder station and Infrastructure Maintenance Depot that might be impacted by both construction and the completed scheme. As noted above the Cobham area is known for geological instability. The detail of the promoter's proposal and any implications are for HS1 Ltd and the appropriate railway safety authorities to respond to, but the integrity and operation of the railway is a wider transport concern.

NPSNN para 5.205 requires that the opportunities to support other transport nodes be considered. The implications for public transport therefore need to be considered, including bus and ferry services across the Thames and rail.

Human health and well-being

The analysis needs to examine the potential impacts on health from air quality, noise and disturbance. Para 13.4.20 picks up the variations in health by Local Authority area. However the analysis needs to be more finely grained as the urban population has significantly worse health than the rural. The Borough Council would support the request by Thurrock Council for a Health Impact Assessment.

Development Land

The route on the east side of Gravesham is located in the Metropolitan Green Belt. Green Belt policy within the NPSNN (at 5.164; 5.170 – 172; and 5.178) follows that set out in the NPPF. Whilst Green Belt is not an issue required to be covered by the 2017 EIA Regulations, it does cut across a number of important aspects that do. There is therefore a clear interrelationship between the EIA to be submitted in support of the DCO application and the case that will need to be made in Green Belt terms.

Inappropriate development within the Green Belt is deemed by definition to be harmful and should only be permitted where the applicant can demonstrate very special circumstances that clearly outweigh harm through inappropriateness and any other harm. The decision maker is required to accord harm to the Green Belt significant weight in the final planning balance.

Whilst the NPSNN does not refer to the closed list of exceptions within paragraphs 89 – 90 of the NPPF considered not 'inappropriate', NPSNN paragraph 6.164 effectively brings them into play. In terms of new buildings, the proposed development would fall outside the list of exceptions contained in NPPF paragraph 89.

As the LTC is not local transport infrastructure and an engineering operation that would not preserve openness and be in conflict with Green Belt purposes, it would also fall outside of the exceptions contained in NPPF paragraph 90.

In short, Gravesham's view is that LTC will comprise 'inappropriate development' within the Green Belt, requiring the demonstration of very special circumstances in the normal way. In addition, it is clear that the actual level of harm (as opposed to definitional) will be substantial and that 'other harms' will potentially be both wide ranging and serious.

Those chapters within the EIA identifying such 'other harms' will therefore be important in assessing the Green Belt case and whether 'very special circumstances' that clearly outweigh harm to the Green Belt and any other harms actually exist. As part of this, a consideration of reasonable alternatives will also be required and those sections of the EIA dealing with this aspect will also be material. As noted elsewhere within this response, Gravesham does not consider the work done to date in respect of reasonable alternatives is sufficient to meet the requirements of policy and further justification will be required.

The red line boundary does not include any major development sites as defined in the Local Plan Core Strategy. However the economic implications go far wider than sites on or near the route itself. The wider analysis will need to look at the implications of the scheme for the development of sites both in Gravesham and wider across North Kent. Locally there are the sites as set out in the Gravesham Core Strategy, which include parts of Ebbsfleet that need to be treated as a whole. The implications for development across Kent Thameside will need to form part of the transport analysis

Pedestrian, Cycle and Equestrian routes

Figure 13.1 shows the Public Rights of Way and other routes that are affected. It should be noted that informal routes inside Shorne County Park, Jeskyns, Ashenbank Wood and Cobham Park are also relevant since they help determine where people actually go and function as part of a wider network. Heat maps produced by mobile phone applications like Strava (<https://labs.strava.com/heatmap/#14.19/0.39758/51.40764/bluered/all>) are a useful starting point (with the caveat they show the activity of a particular type of user). Count surveys would establish actual popularity.

The default position would be that all existing routes should be maintained with minimal diversion. A particular concern is the NCR 177 along the north side of the A2 and how that is affected by the slip roads and widening of the A2. The impact on sections of road that are currently quiet but may become considerably busier should be included in the analysis. The southern end of Thong Lane, including the bridge over the A2, are an obvious example where there is a horse riding route through Shorne Woods Country Park that then uses Thong Lane to cross the A2 and connect into Scotland Lane south towards Cobham. The Thong Lane bridge is wide enough to accommodate them, but this may not be the case if traffic flows considerably increase. New structures should be built to bridleway standard to allow flexibility and that may be relevant to modification of existing structures if required (e.g. higher parapets).

The scheme description excludes cross-river movement by non-motorised users, whereas there is provision at the existing Dartford Crossing. This topic should be explored further.

Section 2.15 talks about diversion of high voltage electricity lines and high pressure gas pipelines. This is particularly pertinent in the narrow gap between Thong and the south east corner of Riverview Park which already contains both of these and into which the Lower Thames Crossing is attempting to fit. The diversion of these utilities may produce environmental impacts in their own right.

Construction Impacts

The nature of the construction impacts is unknown at this stage. There would appear to be a major site adjacent to Thong Village which on the basis of 2.13.8 will have some 24 hour activities. Based on previous experience of works on the A2 some construction operations at least will have to be performed at night because of the day time impact on traffic flows. The construction period will be considerable in length of up to 6 years.

The question of from which end the tunnel is bored is left open. If it is from the south the implications are highly significant due to the immediately surrounding residential population and the 24 hour working involved. Spoil disposal will be a major issue as significant traffic along the A226 through Higham or through Gravesend would not be acceptable. Rail and river access would only be possible by building a bridge over the railway to avoid the Ramsar site and the Metropolitan Police rifle range. Haul back along the trace to the A2 gives access to the A2 coast-bound (and access from) requiring a U-turn at a junction outbound or on return depending to the destination(s). The AADF of this road is over 110,000 vehicles per day.

Detailed points

Para 13.4.3 – no reference to the potential impacts in the Shorne/Cobham area around the A2 – for example access to Shorne Country Park

Para 13.4.6 – although not crossed by the proposals the widened A2 abuts HS1 and has potential implications for its stability and operation

13.4.26 – Gravesham has the lowest GVA of any authority in Kent

Para 13.4.17 – Town Pier and pontoon for Tilbury ferry should be mentioned as part of the local transport infrastructure

Para 13.4.29 – London Resort now not Paramount Park

Figure 13.1 – The Gravesend Crematorium and Cemetery is shown in the wrong location – it is further east. The shared cycleway/footway south along the A227 from Tollgate to Istead Rise is not shown. Old Road West Surgery is McKenzie Way Branch of the Old Road West Surgery – the main surgery is in Old Road West

Chapter 14: Road Drainage and Water Environment

Main points and comment

The critical issues are the potential disruption to existing drainage arrangements along the A2, drainage of the cutting running from Thong down to Chalk, pumping from the tunnel, implications on the water table on the marshes in both construction and operational phases and the knock on implications of this on the biodiversity, and finally flood risk along the Thames.

The A2 has a series of drainage lagoons, some of which also serve HS1, that will need to be maintained/expanded/replaced as appropriate. The cutting from Thong Lane down to the tunnel portal is steep and is likely to require pumping of surface water since it is effectively a channel without a natural escape and soakaways may not be adequate to cope with the potential volume of water. The marshes are a sensitive receptor so a detailed understanding of water quality, the drainage network and management of water levels for wildlife will be required. Water from the tunnels may well be saline or subject to pollution so will require separate treatment.

Construction of the tunnel may have implications for the water table on the marshes and there are similar concerns over disposal of any water extracted due to impacts on biodiversity. The current red line boundary makes no provision for surface water management in the area between the tunnel portal and the river, which logically may be required.

Flood risk in relation to LTC is a critical issue given its relationship to the River Thames both during construction and subsequently during the operational phase. Gravesham assumes that during the construction phase, a Flood Risk Management Plan will be put in place to safeguard workers should an extreme tidal event cause a breach or over-topping of the defences.

Even if the southern portal is located outside Environment Agency Flood Zone 3a (defended flood plain) it would appear that the northern portal may not be. This means that the tunnel and cutting to the south lying below any surge tide level may be susceptible to rapid inundation should the defences on the northern shore be overtopped or breached. Gravesham therefore assumes that a

separate Flood Risk Management Plan will be required for the operational phase and that this will be periodically reviewed in accordance with a requirement attached to the DCO.

In addition, tunnelling under the soft defences to the east of Gravesend may result in settling, reducing crest height or lead to the defences being made more vulnerable to breaching through fissuring etc. It is important therefore that the defences are regularly surveyed during construction and thereafter to ensure that they are not compromised and any necessary remedial action undertaken.

Detailed points

- Para 14.4.3 - Thames and Medway Canal actually sits above the drainage network on the marshes
- Para 14.4.8 – perched water tables do exist in the Cobham area (from HS1 construction). There are a number of water features in the area, for example the Repton Ponds, which must be maintained and although not directly impacted might be if the local water table was affected.

Chapter 15: Climate

Given the life of the LTC will be in excess of 100 years, it becomes necessary under the NPSNN to take a long-term view when it comes to flood risk and climate change and this needs to be reflected in the ES. Particular attention is drawn to the following extracts from the NPSNN (key points underlined):

4.42 The applicant should take into account the potential impacts of climate change using the latest UK Climate Projections available at the time and ensure any environment statement that is prepared identifies appropriate mitigation or adaptation measures. This should cover the estimated lifetime of the new infrastructure. Should a new set of UK Climate Projections become available after the preparation of any environment statement, the Examining Authority should consider whether they need to request additional information from the applicant.

4.43 The applicant should demonstrate that there are no critical features of the design of new national networks infrastructure which may be seriously affected by more radical changes to the climate beyond that projected in the latest set of UK climate projections. Any potential critical features should be assessed taking account of the latest credible scientific evidence on, for example, sea level rise (e.g. by referring to additional maximum credible scenarios such as from the Intergovernmental Panel on Climate Change or Environment Agency) and on the basis that necessary action can be taken to ensure the operation of the infrastructure over its estimated lifetime through potential further mitigation or adaptation.

4.44 Any adaptation measures should be based on the latest set of UK Climate Projections, the Government's national Climate Change Risk Assessment and consultation with statutory consultation bodies. Any adaptation measures must themselves also be assessed as part of any environmental impact assessment and included in the environment

statement, which should set out how and where such measures are proposed to be secured.

4.45 If any proposed adaptation measures themselves give rise to consequential impacts the Secretary of State should consider the impact in relation to the application as a whole and the impacts guidance set out in this part of this NPS (e.g. on flooding, water resources, biodiversity, landscape and coastal change).

4.46 Adaptation measures can be required to be implemented at the time of construction where necessary and appropriate to do so.

4.47 Where adaptation measures are necessary to deal with the impact of climate change, and that measure would have an adverse effect on other aspects of the project and/or surrounding environment (e.g. coastal processes), the Secretary of State may consider requiring the applicant to ensure that the adaptation measure could be implemented should the need arise, rather than at the outset of the development (e.g. reserving land for future extension, increasing the height of an existing sea wall, or requiring a new sea wall).

Whilst paragraph 4.41 refers to the UKCP09 projections, Gravesham's understanding is that the Meteorological Office has issued guidance in advance of the publication of fresh projections under UKCP18 that sea level rise is likely to be worse than predicted. See <http://ukclimateprojections.metoffice.gov.uk/media.jsp?mediaid=88739&filetype=pdf>

This means that there may be uncertainty as to what level to use for a storm surge flood level until UKCP18 becomes available and this is factored into the EA's flood model for the tidal Thames. It would be useful therefore for the EIA Scoping to set out how this should be addressed.

The long term upgrading of the Thames tidal flood defences is considered through the Environment Agency's Thames Estuary 2100 Plan (TE2100). This provides for a flexible response to climate change adaptation and sea level rise through a programme of interventions including renewal and upgrading of defences and the construction of a new Thames Barrier either at Long Reach, Dartford or to the east of Gravesend.

Gravesham's understanding is that whilst Long Reach is the preferred option, no decision has yet been made on the final location for a new barrier. The continued ability to construct one to the east of Gravesend should not therefore be compromised by the LTC project. Irrespective of this the current TE2100 Plan indicates that a new north-south flood defence with a crest height of 8m AOD will be required to the east of Gravesend. To the east of this, the flood defences will not be upgraded and the area will become more susceptible to flooding over time.

If sea level projections are worse than under UKCP2009, this may have implications for the TE2100 timetable – i.e. the construction of a new flood defence to the east of Gravesend and raising other defences may have to be brought forward from 2040 as originally set out in the TE2100 Plan. It may also be necessary to set back defences to create salt marsh and provide compensatory fresh marsh earlier due to an increasing rapidity of coastal squeeze.

Even though LTC will be in tunnel under the marshes at this point, Gravesham's assumption is that Highways England would want the trace to be inside the new flood defences rather than in an area that is susceptible to flooding and saline intrusion. One option for the new defence may therefore be for it to run north-south in alignment with the Metropolitan Police firing range bund, with this

being reconstructed to perform a flood defence function thus avoiding encroachment of the range and having two large embankments close together.

However, if there is a need to protect the trace of the LTC from flooding in this way, it forces the flood defence further to the east than it may otherwise need to be. As such, it would have a greater impact on areas designated for their nature conservation value.

For the purposes of EIA Scoping, it is necessary therefore to know whether Highways England require the trace of the LTC across the marshes to be inside the new flood defences. This is because under paragraph 4.44 of the NPSNN it may trigger the need for the combined impact of LTC and the TE2100 flood defence to be included in the EIA, even if it isn't constructed at the same time. It would also have implications in terms of HRA.

The construction of a new flood defence to the east of Gravesend in itself has implications because there would be a need to develop a surface water drainage strategy for the impounded area that has regards to outfalls being tide locked. This could become an increasing problem given sea level rise. Ensuring the culverts under the canal/railway are in good order and can transfer water will also be critical given climate change is likely to result in increased winter rainfall etc. This area has already been subject to extensive flooding in the recent past due to a collapsed culvert.

Whilst it is likely that an engineering solution can be found to drain the LTC and approach roads, if this involves attenuation and final discharge onto the marshes before entering the river, there may be opportunities to combine this with the creation of new areas of fresh water marsh as part of habitat creation/conservation.

Given the material that will be generated as a result of building the LTC in a deep cutting south of the river, it may therefore make sense to look at LTC and TE2100 in this area as complementary projects that could be covered by the same DCO application. The material could be used to construct new flood defences, whilst the creation of new habitat could act as mitigation for the adverse impact of both. Any CPO powers contained in the DCO could also extend to those areas of land required to build and access the new flood defences.

In any event, the LTC project needs to be cognisant of the need to upgrade flood defences to the east of Gravesend under the TE2100 plan and show that it does not compromise the ability to undertake those works in the future in an acceptable way.

Chapter 16: Cumulative Effects

The major projects in the immediate area that are potentially relevant to the cumulative effects are:

- A2 Junctions (EIA Scoping just out to consultation for DCO submission in 2018)
- Ebbsfleet Garden City (as omnibus term for the major existing permissions in the Ebbsfleet/Eastern Quarry/Bluewater area)
- London Resort (DCO being prepared)
- Tilbury 2 (DCO submitted)
- Tilbury Energy Centre

On a wider canvass

- M20 Lorry Park (if that is progressed further)
- Silvertown tunnel (TfL – SoS decision awaited)
- Cumulative impact of the housing delivery implied by the ‘Right Homes’ consultation across Kent, Thurrock and Essex

Geographical Glossary

To avoid confusion some of the local usage of names is set out below

A2 junctions

Three Crutches or Junction 1 M2 – the three way junction between the A2/M2 trunk road, A289 Wainscott Bypass and A2 Watling Street (into Strood)

Cobham junction – between Brewers Road and the A2, connecting to Shorne (northwards) and Cobham (southwards)

Marling Cross junction – or Gravesend East – the junction immediately west of LTC on the east side of Gravesend connecting to Valley Drive/Hever Court Road into Gravesend and southwards to Cobham and Sole Street via Henhurst Road

Tollgate junction – A227 Wrotham Road leading into Gravesend/Northfleet and south to Istead Rise, Meopham and ultimately the M20.

Pepper Hill Junction – serving Hall Road and Northfleet, as well as the rural area (New Barn, Southfleet) to the south

Ebbsfleet junction – A2260 into Ebbsfleet/Eastern Quarry/Swanscombe and Northfleet (to be subject to separate DCO's by Highways England and London Resort)

Other places, features and roads

Chalk – the area of Gravesend on the north east corner of the built up area formerly a separate village

Riverview Park – name of the housing estate on the south east corner of Gravesend built in part on the form Gravesend Airport

Thong Lane – runs from A226 Rochester Road south to joining Watling Street – see below. Urban street to southern edge of Riverview Park, narrow rural lane thereafter

Thong – village of Thong, with a conservation area, not inset from the Green Belt

Park Pale – link road from Brewers Road to Park Pale Farm and bridge over the A2 to access Rochester & Cobham Park Gold Club. Not Park Pale Lane as on some maps

Watling Street – overall street name for A2 and various related roads (reflecting a long history of alteration and enhancement). The stretch of lane between Brewers Road/Halfpence Lane/A2 slip roads roundabout and Thong Lane where it crosses the A2 is called Watling Street. This was altered as part of HS1 works

HS1 – High Speed 1 formerly known as Channel Tunnel Rail Link. 186mph railway carrying international and domestic passenger trains, and international freight trains. The Infrastructure Maintenance Depot supports the maintenance of the railway, whilst the Singlewell Feed Station supplies electricity from the national grid. HS1 was permitted by the Channel Tunnel Rail Link Act (1996) which included widening of A2/M2 to the Cobham junction.

CEMHD Policy - Land Use Planning
NSIP Consultations
Building 2.2, Redgrave Court
Merton Road, Bootle
Merseyside, L20 7HS

Your ref: TRO10032
Our ref: 4.2.1.6158

HSE email: NSIP.applications@hse.gov.uk

FAO Michael Breslaw
The Planning Inspectorate
Temple Quay House
Temple Quay,
Bristol
BS1 6PN

Dear Mr Breslaw

23 November 2017

**PROPOSED LOWER THAMES CROSSING (the project)
PROPOSAL BY HIGHWAYS ENGLAND (the applicant)
INFRASTRUCTURE PLANNING (ENVIRONMENTAL IMPACT ASSESSMENT) REGULATIONS 2017 (as amended) – Regulations 10 and 11**

Thank you for your letter of 3rd November 2017 regarding the information to be provided in an environmental statement relating to the above project. HSE does not comment on EIA Scoping Reports but the following information is likely to be useful to the applicant.

HSE's land use planning advice

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

The redline boundary of the development falls with the consultation zones of one major accident hazard site and several major accident hazard pipelines; the table below lists these.

HSE Ref.	Site/Pipeline Operator	Operator Ref.	Site/Pipeline Name
Sites			
H1277	British Bata Shoe Company		
Pipelines			
7130	Southern Gas Networks	1400	Deangate / Great Buckland
8406	National Grid	2686	18 feeder Shorne / Farningham
7094	National Grid	1366	5 feeder Shorne / Tatsfield
7095	National Grid	1367	5 feeder Shorne / Isle of Grain
13682	Southern Gas Networks	2754	Shorne to Rochester
4057584	National Grid	2786	18 feeder Isle of Grain / Gravesend
8191	National Grid	2450	18 feeder Stapleford Tawney / Tilbury Thames North
8176	Cadent Gas Ltd	2435	Baker Street / Canvey (baker street / Stanford) (22)
8149	Cadent Gas Ltd	2408	Orsett / Chadwell St Mary (21)
8183	Cadent Gas Ltd	2442	Horndon / Clockhouse Lane (111)
8175	Cadent Gas Ltd	2434	Romford / Baker street (23)
7324	Barking power Limited		Horndon to Barking pipeline

8146	Cadent Gas Ltd	2405	Hordon / Abridge (2)
8142	Cadent Gas Ltd	2401	Mardyke / Fords Dagenham (20)

Would Hazardous Substances Consent be needed?

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

Hazardous Substances Consent would be required if the site is intending to store or use any of the Named Hazardous Substances or Categories of Substances and Preparations at or above the controlled quantities set out in schedule 1 of these Regulations.

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

Explosives sites

This project routes the bridge through the safeguarding zone between green and yellow lines of the Tilbury berths and just outside the purple line for another berth. We would therefore expect to review the licence for both of these berths.

Waste

In respect of waste management the applicant should take account of and adhere to relevant health and safety requirements. Particular attention should be paid in respect of risks created from historical and operational landfill sites. More details can be found on HSE's website at:
<http://www.hse.gov.uk/waste/index.htm>

Electrical Safety

No comment.

Please send any further electronic communication on this project directly to the HSE's designated e-mail account for NSIP applications. Alternatively any hard copy correspondence should be sent to:

Mr Dave Adams (MHPD)
NSIP Consultations
2.2 Redgrave Court
Merton Road
Bootle, Merseyside
L20 7HS

Yours sincerely,



Dave Adams
CEMHD4 Policy



Historic England

EAST OF ENGLAND OFFICE

Mr Michael Breslaw
The Planning Inspectorate
3D, Temple Quay House
Temple Quay
Bristol
BS1 6PN

Direct Dial: 01223 582720

Our ref: PL00217262

27 November 2017

Dear Mr Breslaw

Re: EIA Scoping Opinion: Lower Thames Crossing: EIA Scoping Notification and Consultation

Thank you for your letter of 03 November 2017 with a formal request for a scoping opinion in relation to the above application, in accordance with Regulations 8 and 9 of the Planning Act 2008 and the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (as amended). Historic England, as the government's lead advisor on the historic environment, offer comments on this proposal, taking into consideration the information provided by the applicant, namely, The Lower Thames Crossing (Scheme number HE540039) Environmental Impact Assessment Scoping Report (Highways England, October 2017).

The proposed development is for the construction of two bored tunnels under the Thames, connecting the A2 in Kent, east of Gravesend, with the M25, south of junction 29 in Essex. The new roads and highway improvements, including widening of the M2/A2 and M25 at each end would constitute a route of 31km, with 3.5km of tunnel. New junctions are under consideration on M25 (intermediate north-facing slip roads between junctions 29 and 30), a modified junction with the A13/A1089 in Essex, new junction east of Tilbury with link road to the west connecting with Tilbury and new junction with the A2 east of Gravesend. An outline of the extent of works likely to be required by the development is outlined in Section 2 of the Scoping Report.

Historic England Advice

The historic environment is a finite and non-renewable environmental resource which includes designated and non-designated heritage assets, historic landscapes and sites of historic and evidential interest. It is a rich and diverse part of England's cultural heritage and makes a valuable contribution to our cultural, social and economic life.

The development would occupy a large area of modified historic landscape which contains a number of designated and non-designated heritage assets. We note that a number of designated heritage assets in Essex within the application site would be directly impacted, and that the settings of many others within the study area would



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749
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also be affected. In relation to buried archaeological remains, there is considerable potential for sites of national importance to be identified during the evaluation process.

The Scoping Report states that DMRB Volume 10 will be used for environmental design and mitigation, while DMRB Volume 11 will provide the framework for EIA, including the level of assessment and reporting of environmental effects, and will be used to assess the significance of impacts of development on heritage assets. Historic England has in the past raised concerns about the use of matrices and tables to determine significance, magnitude of impacts and receptor sensitivity. Whilst the standardised EIA matrices are a useful tool, the analysis of impact, harm, significance and setting is a matter of qualitative and expert judgment which cannot be achieved solely by the use of systematic matrices and the use of tables should be seen primarily as supporting material. We recommend that the applicant seek to deliver a clearly expressed, iterative and non-technical narrative for significance and harm, which is tailored to this specific environment. We advise that the impact of the proposed development on the setting and significance of designated and non-designated heritage assets to be fully assessed in accordance with legislation, policy and guidance. In particular, we recommend the analysis follows the staged approach to assessment set out in Historic England's Good Practice Advice in Planning 3: The Setting of Heritage Assets. The ES document would need to provide sufficient visual information to illustrate how the proposed infrastructure would be seen in views from key designated heritage assets and we would be pleased to provide more detailed advice on proposed viewpoints for photomontages once an initial list has been drawn up.

We note that a single chapter (Chapter 7) on the historic environment is proposed for the ES. However, impacts dealt with in other chapters which would have a bearing on the historic environment, need to be clearly identified in those chapters and cross-referenced back to Chapter 7. This is particularly true of Chapter 10 on Geology and Soils, which is highly relevant to geoarchaeology and early prehistory. Equally important is the Landscape and Visual Assessment (Chapter 8), where we consider it important to use historic environment receptors in to the assessment process, but the scope for other aspects of the project to impact on the historic environment should be fully considered. We consider that photomontages and/or wirescape images from heritage specific viewpoints would be essential, particularly from key designated heritage assets. Wider landscape views are also needed, including any images that would seek to illustrate cumulative impacts. The assessment of 'setting' likewise should not be solely be restricted to visual impact, and would need to consider the impact from other environmental factors such as noise, traffic and lighting.

Detailed Comments on Scoping Report (numbering follows Scoping Report)

Chapter 2: The Project



24 BROOKLANDS AVENUE, CAMBRIDGE, CB2 8BU

Telephone 01223 582749
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2.2.8 Plate referred to should be **1.3** not 1.1

2.2.7/3.2.3 The Tilbury Docks link road shows roundabouts which would provide link into Fort Road. This would result in two rather than a single replacement road very close to the northern boundary of the Tilbury Fort scheduled monument which would increase the adverse impact on its setting. Consideration should be given to downgrading Fort Road so that it is for local access to Tilbury Fort and Worlds End Pub only.

2.12.3 If a Slurry TBM is selected to construct the tunnel, the potential for slurry breakout to occur and the implications that this may have on any surrounding archaeological features and deposits will need to be considered. This may include the infilling/coating of features/remains in the slurry mixture and how this may impact their degradation and/or preservation in the future. The composition and properties of the bentonite slurry will need to be defined in order to determine if, for example, it would alter the pH of the nearby deposits.

2.12.7 The hydrogeological assessment may be of value when investigating the preservation conditions and potential of any archaeological deposits, as it will help define how vulnerable the system is to change in water levels and therefore what this would mean for any organic archaeological remains that are preserved in these deposits. This may include palaeoenvironmental remains (pollen, plant remains, insects, shells etc.) through to artefacts, such as structures/objects composed of wood or leather. Additional information on the value of this information for archaeological assessments can be found in the Historic England 'Preserving Archaeological Remains' (2016) guidance:

<https://historicengland.org.uk/images-books/publications/preserving-archaeological-remains/>

2.15.1 If there is a need to move or introduce new high voltage power lines, will consideration be given to undergrounding where this might enhance the setting of DHAs or landscape character?

2.16.1 When assessing the contaminated land mentioned north of the River Thames, it may be useful to refer to the Historic England 'Land Contamination and Archaeology' (2017) guidance. This document discusses the commonality in approach to risk assessment for both land contamination studies and archaeology, highlighting that information gathered for one discipline may enhance the understanding and management of the other:

<https://historicengland.org.uk/images-books/publications/land-contamination-and-archaeology/>





2.17.6. It is stated that materials may be transported by water, which would require the construction of a new jetty. If this option is selected then it should be discussed with Chris Pater (Head of Marine Planning, Historic England) due to the impact that this may have on any near surface or buried archaeology, both through the construction and dredging required as part of the development, as well as the anchorage of vessels.

Chapter 6: Air Quality

6.6.5 No reference to assessing impacts on DHAs in the DMRB according to this section, but we believe these should be assessed where they are not identified as residential, places of worship etc. For example, if the Tilbury rail loop were to be used transport/removal of arisings then there would be an impact on the Tilbury fort which is an important visitor attraction. .

Chapter 7: Cultural Heritage

7.3.3 Record of meeting with Historic England and heritage consultants in October 2017 should be included. Was any corresponding meeting held with ECC Place Services, alongside that for Kent CC?

7.3.4 The list of Historic England roles which will contribute to pre-application advice is incomplete and inaccurate. Please see attached contact list/organogram and revise in line with this.

Table 7-1: Datasets Consulted

Data sets on scheduled monuments are from **Historic England**, not English Heritage.

Date of baseline data for conservation areas is as of Feb-Mar 2015 at latest and will need checking for updates.

It should be stated that the GLHER also records archaeological remains of value in the study area, not just the Kent and Essex HERs.

Table 7-2: Additional Baseline Information

The scope of the assessment should be explicitly informed by an understanding of and reference to regional heritage/archaeological Research Frameworks which exist for the study area (East of England, Greater Thames Estuary, South East and London, insofar as they are relevant to the project.

HERs are typically inadequate for the Palaeolithic and a few additional baseline sources are included in Table 7-1, but it would be worth including additional sources



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such as the English Rivers Palaeolithic Survey and the Southern Rivers Palaeolithic Project (Wessex Archaeology) and relevant Quaternary Research association Field Guides, as well as Regional Research Assessments in Table 7-2.

The Historic England Heritage at Risk Register should be added to baseline data, to inform mitigation measures and whether there may be an opportunity to secure benefits which address at risk issues if any assets on the register are affected.

Thames Chase Community Forest desk-based assessment produced by the Passmore Edwards Museum would also be valuable (to note Essex CC have a hard copy and that no digital one exists).

In addition, placename and Domesday evidence should be explored in relation to the often cited Saxon roots of Ockendon, which are currently poorly attested in the archaeological record.

7.6.7 Key Environmental Receptors

Grade II listed buildings in Essex should be properly identified.

There are nine grade II listed buildings within approximately 100m radius of the site. In particular, the following five grade II listed buildings are located within, or immediately adjacent to the boundary of the application site.

- Thatched Cottage, Baker Street, Orsett (within)
- Murrells Cottages, 1 and 2 Stanford Road, Orsett (within)
- 1 and 2 Grays Corner Cottages, Baker Street, Orsett (within)
- Whitecrofts Farmhouse, Stanford Road, Orsett (adjacent)
- Polwicks, Church Road, West Tilbury (adjacent)

The remaining four buildings are within 100m of the site;

- Heath Place, Hornsby Lane, Chadwell St Mary
- Former Gateway at Groves Barns, North Road, South Ockenden
- Barn and Stable Block to the North of Broadfields Farmhouse, Cranham
- Little Wellhouse, Stifford Clays Road, Orsett

The development will also have a negative impact on the West Tilbury Conservation Area and the North Ockenden Conservation Area, both of which are located within approximately 100m radius of the site.

Grade II listed buildings in Havering should be properly identified. It is not clear why some conservation areas are listed within high value or medium value - is this based on their perceived significance or the likely severity of impact?

Unlisted historic buildings in Chadwell St Mary, Orsett and South Ockendon - it is not





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stated if these make a contribution to any conservation areas.

In Havering, North Ockenden conservation area should be identified. The listed heritage assets within it, especially the grade I church of St Mary Magdelene (which is identified), are very vulnerable in terms of the new junction and slip roads. In Havering, Is Manor Farm and associated outbuildings(S of B1421, Ockendon Road) among unlisted historic buildings assessed? These appear to be very close to the new M25 junction.

In Havering, if widening of the M25 between the new junction and J29 takes place outside the existing corridor, Broadfields Farm and Franks Farm, both listed historic buildings grade II, are close to M25 on the west side.

Is the Cranham conservation area, and associated listed buildings, in the study area?

There are Palaeolithic remains of at least national significance in the area of the crossing route and it would certainly be worth including non-designated Palaeolithic remains in 7.6.7 to demonstrate that there are likely to be archaeological deposits of equivalent importance to the designated heritage assets they include. A number of internationally significant Quaternary sites such as Purfleet, Aveley, Swanscombe, and Tilbury are located. In addition, regionally significant Holocene sequences have also been recorded at Tilbury that contributes to our understanding of climate and environmental change, relative sea level changes and archaeology.

7.6.8 Unknown value Archaeological remains: this should be informed by an overarching understanding of regional research frameworks as well as site distribution, topography, geology etc., all of which would contribute to modelling. There is also potential for impacts on deposits which contain evidence for the early history of the Thames and palaeoenvironment (including information on Relative Sea Level changes), and this should be which cross referenced to Ch. 10 (Geology) and vice versa. There is also the potential for impacts on marine archaeological remains should jetty facilities for transport of arisings be required (cross-ref to 7.7.10). It should be noted that any Palaeolithic remains present could be of national significance based on the known Palaeolithic archaeology of the Lower Thames area.

7.7.3 Archaeological evaluation needs to be considered in relation to the total project land take. It is extremely important that all areas which may result in ground works are identified by cross referencing as necessary, even though their physical locations are not yet known. These include, for example, all ground works relating to construction compounds, the management and storage of arisings, works relating to drainage and flood prevention, habitat compensation etc.

7.7.4 Additional AP and Lidar cover should be commissioned where cover is incomplete or detail can be improved. Given the Palaeolithic significance of the river



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terraces in particular, it is essential for the Palaeolithic potential of the scheme to be assessed by a Palaeolithic/Pleistocene specialist as part of the DBA. Existing records could also be used to develop an initial deposit model that could be enhanced following the later geoarchaeological sampling mentioned in Section 7.7.6. Given the presence (and potential impact on) deep Quaternary (i.e. Pleistocene and Holocene) deposits of archaeological significance along the route there is likely to be archaeology buried within the natural deposit sequence, which will not be adequately represented in the HER and by shallow geophysics and fieldwalking or even shallow evaluation trenches. The best way to identify the potential depth and character of this archaeology is to undertake a preliminary deposit model (based on any available stratigraphic information including archaeological, geotechnical, Quaternary) to follow the route footprint, as part of the DBA. The model will help illustrate the depth, characteristics and potential of the Quaternary deposits of archaeological interest and should inform any subsequent evaluation trenching, borehole sampling and/or geophysical survey. A geoarchaeologist would need to do the deposit modelling.

It is also important to note that based on available information the DBA should start to help understand the state of preservation of any surviving archaeology on the site, as described in the Historic England 'Preservation of Archaeological Remains' (2016) guidance, which should consider:

- What categories of archaeological remains are likely to be preserved?
- What is the expected state of preservation of these remains?
- Is waterlogged archaeology likely to survive?
- Are similar conditions likely to extend across the whole site or are they likely to vary?

To answer these questions the author would need to examine:

- landscape position;
- geology;
- hydrology;
- evidence from local sites in similar situations;
- geotechnical information;
- land-use history etc.

The collection and assessment of this information would pave the way for the evaluation to include questions that address the state of preservation and burial environment of any archaeology and environmental evidence found, as well as flagging up the need for a deposit model (or/and a water environment study as part of a subsequent stage of work).

7.7.6 What is the rationale for only doing geophysical survey on areas of cut and fill? The use of embankments cannot, at this stage, be considered to represent the opportunity for preservation in situ, not compound/storage areas etc. In addition:



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geophysical survey should include deep penetrating techniques (such as electromagnetic induction (EMI) and electrical resistivity (ERT) in appropriate areas; geoarchaeological boreholes might be better than 'geoarchaeological sampling' and their location would be aimed to understand gaps and elucidate uncertainties identified through the deposit modelling undertaken in the DBA.

The opportunity to undertake these boreholes as part of the proposed ground investigation work (10.5.2) should be made use of.

- The boreholes and deep geophysics would update the deposit model and help target locations for evaluation trenching.
- Geophysics and geoarchaeological coring may be required if a new jetty is to be built, and may allow the terrestrial and marine sequences to be linked into a single scheme, which would provide information of value to the archaeological community.

Given the recent guidance, there will be a need to consider the state of preservation of any archaeology and palaeo-environmental remains found

7.7.7. The Team should include a Palaeolithic specialist and a geoarchaeologist.

7.7.8 The scope and methodologies for all aspects of assessment and evaluation should be agreed by the relevant archaeology advisers, not just the ones for further stages of survey, as is currently stated. Any geophysical work should be additionally agreed in consultation with the HE specialists at Fort Cumberland and archaeological trenching and geoarchaeological work should be carried out according to methodologies agreed with HE science advisers

7.7.10 Archaeological assessment/evaluation/ mitigation would be required if a jetty is constructed, which may include geoarchaeological and palaeoenvironmental assessments.

7.7.11 Air quality, as well as Noise and Traffic should also be considered in relation to DHAs where appropriate.

7.8.1 The physical impacts of the proposed development on archaeological features/deposits may also include the presence of bentonite slurry if it spreads out from the source of the tunnel boring.

7.9.1 Archaeological recording and sampling strategies: Appropriate strategies would also be required for historic buildings and landscape features, as appropriate.

7.9.2 Preservation in situ should be the presumption where ground works can be moved away from buried archaeological remains: HE has issued guidance on



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physical preservation of archaeological remains

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major engineering projects may offer only limited scope to achieve this. It is therefore important to ensure that the DBA and evaluation seek to understand the state of preservation of archaeological remains and the nature and vulnerability of their burial environment. This will ensure that remains remaining buried close by or below the direct impact of the scheme are not indirectly affected by factors such as lowered water tables or chemical changes to the burial environment.

Mitigation should also include improved public understanding of the heritage that is to be lost through open days, outreach programmes, social media and popular publication. Provision for this should be built into the project at an early stage.

Chapter 8: Landscape

Table 8.1 when will HE be consulted on receptors for DHAs?

8.4.4. Add Tilbury Fort

Table 8.2/8.3 reference Resource/Receptor in relation to the importance of settings for Tilbury and Coalhouse Forts.

Table 8.4 High Sensitivity - this should include 'users' of DHAs.

8.9.2 Any impacts on buried archaeology from landscape mitigation areas need to be considered to avoid mitigation of one impact resulting in harm to another.

The assessment of historic landscape features which contribute to landscape character and grain should be identified. Opportunities to conserve and manage impacts on historic landscape features such as field boundaries, hedgerows, woodland and routeways should be taken, using a multidisciplinary approach derived from ecological, landscape and archaeological techniques, so that their significance can be properly identified, and recording undertaken where loss is unavoidable, together with the careful design and mitigation of the impacts arising from new offset habitat creation.

Chapter 9: Biodiversity

Some parts of the Biodiversity chapter should also be reviewed as part of the Cultural Heritage assessment. Some archaeology, which cannot easily be designated in its





own right (e.g. Palaeolithic, waterlogged, evidence for past environment context) is given some protection as a bi-product of ecological designation and where relevant this should be identified in the assessment.

9.6.4 Reference to Hangmans Wood SSSI and Deneholes scheduled monument which is not reflected in Chapter 7. Is there any heritage impact? Similarly there is important but non-designated Mesolithic archaeology surviving in Cobham and Shorne Woods SSSIs, which should be considered / reflected in Chapter 7 or 9. Some archaeology (e.g. Palaeolithic, waterlogged) is given some protection as a bi-product of ecological designation and where relevant this should be identified in the assessment.

9.9.1, as with 8.9.2 above, the same applies to habitat replacement.

Chapter 10: Geology and Soils

10.1.4 Needs cross reference to Chapter 7 Cultural Heritage. Certain parts of this chapter are highly relevant for understanding archaeological potential and value and the information should be utilised in the cultural heritage assessment. These include: 10.1.3 which deals with geology and soils in relation to their engineering properties, contamination and agriculture. It does not, however address the changing environment and earth surface processes the geology, soils and geomorphology represents. Could the impact of the scheme on the geodiversity and geomorphology resource / receptor be scoped into the EIA / Environmental Statement / next stage of work? We have an interest in this being included because geodiversity has strong links with cultural heritage (the geology shapes the landscape occupied and utilised by human communities). At the moment geodiversity is alluded to in both chapters but not covered at all.

10.4.5 - 10.4.16 Geology: the route is divided into landscape sections based on geology and topography. These zones / this approach would also be useful in describing archaeological potential and would mesh well with the construction of a deposit model

10.4.18 - 10.4.29 Hydrogeology: - this information would usefully feed into an understanding of the water environment in the alluvial parts of the site and hence provide information about the likely preservation of archaeological remains. The dewatering mentioned in 10.8.6 also needs to be considered and cross-working between the hydrogeologists and archaeological consultants is recommended.

- Landfills - the infilled quarries are likely to be areas where most archaeology has been removed and should be identified (if not done so already) on the maps of archaeological value that are produced as part of the DBA.





Table 10-5: Land stability hazards : these hazards could affect the survival and preservation of archaeology; and tackling some of these hazards could impact on archaeology 10.4.18-10.4.29 If significant organic archaeological remains are recorded in the deposits impacted by the proposed development, and it is decided that they should be preserved in situ (as suggested in Section 7.9.2), then it may be necessary to develop a conceptual model for the hydrology/hydrogeology for parts of the proposed development area. These sections provide information that may be of value to this process, as well as Table 10-6. The conceptual model would aid the understanding of the system present and how vulnerable it is to change (see the Historic England guidance 'Preserving Archaeological Remains: Appendix 3 - Water Environment Assessment Techniques' (2016)). This information would be required if the proposed development could alter the hydrology of an area, as this may impact the preservation conditions on the site and therefore if it is possible to preserve archaeological remains in situ. A preliminary hydrodynamic model was prepared (see Figures 14.1, 14.2 and 14.5 in Appendix F) and may provide some of the relevant information required for the conceptual model.

10.4.43-51 There needs to be cross working between cultural heritage and geological consultants to have certainty about the extent of all landfills so that archaeological sterile areas can be identified with confidence. It may also be useful to refer to the Historic England 'Land Contamination and Archaeology' (2017) guidance for the reasons discussed for Section 2.16.1 above (same comment for section 10.7.2).

10.4.54 Mines: any historical interest in these mines/quarries?

10.4.64 - 10.4.66 Soils: soil characteristics will influence the preservation of archaeology.

Table 10.5 mentions the potential hazard of compression when certain deposits are loaded or compressed as part of the construction and operation phases of a project. The impact that compression may have on any archaeological remains will need to be discussed along with the strategy that would be implemented to mitigate the potential damage. This section should also refer to Fig 10.6 not 10.5; Landslides: this should refer to Fig 10.5, not 10.6

10.5.2 The ground investigation will also inform archaeological assessment (see 7.5.1 and 7.7.6). It would be most cost-effective and provide more robust baseline information if there was geoarchaeological input to the design (methodology, locations) of the ground investigation and if a geoarchaeological watching brief was included in the work.

10.5.2 Other baseline information (10.5.2) and section 10.9.1 mention proposed extensive ground investigations. Geoarchaeological input into the location of boreholes and test pits, the recording, monitoring / watching brief strategy and the need for





additional purposive geoarchaeological boreholes should take place. This will require discussion between the geological/geotechnical and archaeological consultants to ensure maximum gain from the ground investigation work.

10.6.1 Are there any receptors relating to Geodiversity or geomorphology that might be impacted (do Natural England identify, for example), given that such receptors are considered in Table 10-6?

Table 10-7 highlights the criteria for determining the magnitude of impact on the geology, mentioning geodiversity value. The geology can help to provide information about the past environmental context for archaeology and will therefore need to be taken into account.

10.8.5 Contaminants: the potential for contaminants to be mobilised or for new pollutant pathways to be introduced might have an effect on archaeological preservation and recovery, which needs to be assessed. The impact that this would have on the archaeology would need to be discussed by cross-working with the archaeological consultants.

10.8.6 Mentions that dewatering may be required as part of the construction phases. The impact that this may have on any archaeological remains present on the site would need to be discussed, and how any damage would be mitigated. Again, cross-working between the hydrogeologists and archaeological consultants is recommended.

10.9.1 As mentioned above in relation to 10.5.2, the ground investigation will also inform archaeological assessment (see 7.5.1 and 7.7.6). It would be most cost-effective and provide more robust baseline information if there was geoarchaeological input to the design (methodology, locations) of the ground investigation and if a geoarchaeological watching brief was included in the work.

Chapter 12: Noise and Vibration

12.1.4 Should be cross-referenced to Chapter 7 Cultural heritage.

12.3.3 Should include other DHAs (listed buildings etc.) not just scheduled monuments.

Chapter 13: People and Communities

13.1.4 Add cross-reference to Chapter 7 Cultural Heritage.

13.2.4 Historic England are keen to engage with discussions to identify how the project can deliver environmental and social benefits for the historic environment as





part of the scheme (this objective should be cross referenced in Chapter 7).

13.4.12 We welcome the reference to Tilbury Fort as a community asset. Other DHAs should be identified as appropriate, for example Coalhouse Fort and others and these should be referred to in Chapter 7.

13.4.8 No reference to fact that Cruise terminal is listed Grade II* (nor is this referred to in Chapter 7 which should be amended to include it, given the Tilbury link road proposal?

Table 13.3 High Value should include DHAs.

Chapter 14: Road Drainage and Water Environment

The moats and outworks and water management of Tilbury fort are an extremely important element of its significance (value) whose water management is vulnerable. Opportunities should be sought to conserve, protect and enhance.

14.2.2 The information gathered to investigate the road drainage and water environment discussed in this section could also help understand the water system affecting archaeological deposit/features of interest and therefore the potential preservation conditions of the site, such as the discussion of hydraulic connectivity presented in Section 14.4.12. The mitigation strategies suggested in Section 14.9.1 would also need to take into account how any changes would impact on the archaeological remains present in the proposed development area.

14.5.5 The risk of harm to buried waterlogged archaeological remains and palaeoenvironmental remains need to be taken into account when the details of surface and groundwater are being considered, and should be cross referenced to Chapter 7.

Table 14.2 Surface ground water dependent for Thames estuary and marshes: Add cultural heritage/ very high/ Tilbury fort.

Chapter 16: Cumulative Effects

missing: retrospective application by Stobart for waste wood processing (17/00977/FUL) falls into category 1c (not yet determined).

Given the nature of the application and the number of designated heritage assets involved we would recommend that the applicant continue to engage in further pre-application discussion with us and jointly with other partners and stakeholders in the sector



Historic England

Yours sincerely,



Deborah Priddy
Inspector of Ancient Monuments
debbie.priddy@HistoricEngland.org.uk



FAO Gail Boyle
Senior EIA and Land Rights Advisor
3D Eagle Wing
Temple Quay House
2 The Square
Bristol BS1 6PN

Growth, Environment & Transport

Room 1.62
Sessions House
MAIDSTONE
Kent ME14 1XQ

BY EMAIL ONLY

Phone: 03000 415981
Ask for: Barbara Cooper
Email:
Barbara.Cooper@kent.gov.uk

1st December 2017

Dear Ms Boyle,

Re: Proposed application by Highways England (the Applicant) for an Order granting Development Consent for the Lower Thames Crossing

Thank you for your letter dated 3 November 2017 providing Kent County Council with the opportunity to inform the Secretary of State on the information to be provided in the Environmental Statement relating to the development of a new Lower Thames Crossing (LTC), east of Gravesend.

For many years Kent County Council has pressed Government for a new Lower Thames Crossing, recognising the increasing pressures on the existing crossing at Dartford and the need for a new strategic route across the River Thames. A new Crossing is the most fundamental piece of infrastructure needed to deliver the significant growth ambitions for Kent and the South East.

The County Council fully supports the chosen route through Kent. A new road south of the river linking the tunnel to the A2 east of Gravesend (the Western Southern Link) is expected to have fewer negative impacts on the environment and local communities compared to the alternative alignment, and will provide the greatest economic benefits, and network resilience.

Following the Secretary of State's preferred route announcement on the 12th April 2017, Kent County Council has been engaging with Highways England to carefully plan and appropriately mitigate any negative impacts of the emerging proposals.

Given the scale of the proposal, there is the overwhelming need to balance the benefits of the scheme with appropriate environmental mitigation measures, and therefore a comprehensive Environmental Impact Assessment (EIA) is imperative to ensuring minimal negative impact on the environment and communities of Kent.

The County Council has reviewed the Scoping Report (November 2017) submitted by the applicant and for ease of reference, provides a commentary structured under the chapter headings used in the report.

2 The Project

The scoping report does not outline what options have been examined in order to maximise economic benefit to North Kent and how local economic benefits south of the River Thames will be enlarged. Therefore, the County Council would suggest Highways England fully engage on the options, particularly around design of the A2 junction, to ensure benefits are secured.

2.9 Non-Motorised User Provision

Current cross-river provision for cyclists consists of a vehicle that drives cyclists across the Dartford Crossing on a limited timetable and a ferry across the river at the site of the proposed route. The popularity of this existing service should be reviewed to ascertain demand for a similar service operating across the proposed LTC.

Consideration should also be given to any excavation works required during the pre-construction phase, including evaluating ground conditions and erecting reptile fencing to conduct ecological surveys. The results of these investigations may influence and determine the final design of the LTC, and the process of collecting the data may cause disruption to Public Rights of Way (PRoW) users. Therefore, the County Council asks for appropriate mitigation measures to be implemented during this time to ensure minimal disruption to the PRoW network.

2.14 Demolition and Land Take

Section 2.14 provides a general description of the construction works including the haul routes and location of the compounds. The effects of construction works on local transport networks in the vicinity of the route will need careful consideration in the full Environmental Impact Assessment.

7 Cultural Heritage

The Cultural Heritage section generally covers what would be expected, but the County Council would make the following comments in relation to this chapter.

7.4 Baseline Information Obtained/Surveys Undertaken

The Historic Environment Record search already undertaken using data provided by the County Council in April 2015 should be updated so that any new information which has been added will be taken into account.

7.5 Other Baseline Information to be obtained

It is not clear from the scoping report which historic maps will be checked but it is essential that both the 25 inch and the 6 inch OS maps are checked as they were often surveyed at different times and include different features and, for the 25 inch, more detail. The OS surveyor's drawing should also be checked together with any available estate or other mapping such as for sewers etc.

Light Detection and Ranging (LiDAR) data held by other bodies not just the Environment Agency should be consulted as Kent County Council also holds data for part of the area.

7.6 Key Environmental Receptors and Their Value

Paragraph 7.6.7 does not list all the Scheduled Monuments within the area of search in the Kent area e.g. bowl barrow in Ashenbank Wood. This should be reconsidered when undertaking a full EIA.

7.7 Methodology

The Assessment phase should include preparation of a deposit model to consider the potential for significant archaeological remains or palaeoenvironmental evidence buried beneath alluvial or colluvial deposits. The model should be further developed through borehole and/or geophysical survey; further Historic England is currently preparing guidance for deposit modelling which should be used to guide Highways England's assessment process.

Assessment and fieldwork should be developed in light of the resource assessment and research objectives of the Greater Thames Archaeological Research Framework and the emerging South East Research Framework. This is a rare opportunity to examine a transect across the Lower Thames and an opportunity to take full advantage of the research potential of the proposed mitigation work.

The desk-based assessment and field evaluation should involve a Palaeolithic specialist where relevant.

Table 7.4 Cultural Heritage Assessment – Criteria for Determining the Value (Significance) of Built Heritage Assets

Table 7.4 refers to World Heritage Sites (WHS) but archaeological sites of international significance are not designated as WHS and therefore should be included as Very High.

9 Biodiversity

The proposed approach to the ecological impact assessment within the report details a range of surveys being undertaken throughout the survey area. It is felt by KCC the results of these surveys will provide a good understanding of the ecological interest of the area, and will be able to support the assessment of impacts resulting from the proposed development and the detailed mitigation strategy.

However, the County Council advises that the following additional points are addressed within any submission:

- The results of the noise and air quality surveys must be reviewed throughout the survey period. If the results of the surveys identify that the breeding/wintering/migratory bird surveys need to be expanded to cover a wider area, they must be completed prior to any planning application submission;
- The results of the ecological surveys must be regularly reviewed;
- The project should identify if there is a need for additional surveys to be carried out or the surveys to be repeated.
- The results of the ecological surveys may highlight that the survey area needs to be expanded in order to require additional information on bat commuting routes;
- All surveys must be carried out at the optimum time of year for the species/habitats. For example, it is not appropriate to carry out the National Vegetation Classification surveys for all habitats at the same time of year;
- The survey areas must include the proposed mitigation areas to provide an understanding about whether the mitigation can be implemented and if it will have a negative impact on other habitats/species of interest;
- All surveys must be completed by the time the Development Consent Order is submitted;
- Due to the scale of the development, a detailed mitigation strategy will have to be produced and submitted to provide an understanding of how the impact can be mitigated and if such mitigation can be achieved; and
- The surveys must include all areas associated with the development, – including construction compounds.

The County Council also highlights that any development must follow the mitigation hierarchy described in British Standard BS 42020:2013:

- Avoidance – avoiding adverse effects through good design;
- Mitigation – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
- Compensation – where residual effects remain after mitigation, it may be necessary to provide compensation to offset any harm; and
- Enhancement – planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

The measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development (BS 42020:2013, section 5.5).

Appendix C – Biodiversity Survey Methodology

The Biodiversity Survey Methodology outlines how Environmental DNA (eDNA) pond surveys will be used to indicate Great Crested Newt (GCN) presence. Previously when this method was trialled at Shorne Woods Country Park, records indicated that some ponds had no evidence of GCN which directly contradicts the experiences of site staff who have visibly seen GCNs in these ponds on numerous occasions. The County Council recognises the limitations of eDNA surveys and would argue that it is

not a conclusive method; therefore, KCC recommends the need for full torchlight surveys to be included to provide clarity on the presence of GCNs.

10 Geology and Soils

The County Council is concerned at the absence of reference to the need to safeguard potentially economic minerals within the EIA Scoping Report and requests for this to be considered when undertaking a full EIA.

11 Materials

Section 11.4 Baseline Information Obtained/Surveys Undertaken

The County Council does not agree with the conclusion made in Paragraphs 11.4.6 and 11.4.7 in relation to current local aggregate reserves. Our recent Local Aggregate Assessment calculates Kent having some 3,790,000 tonnes of permitted reserves (not overall resources). Comparing this figure to the 75,680,000 tonnes stated within the scoping report, the County Council has identified an inconsistency with monitoring records and would recommend this information is amended.

Appendix D – Materials Baseline

Appendix D shows active and inactive quarries in Kent. It is not possible to differentiate between the two in the presented tables.

13 People and Communities

Section 13.1 Introduction

Paragraph 13.1.3 in the Scoping Report states the issues related to people and communities that will be considered during both the construction and operation phases. This includes severance, pedestrians, cyclists and equestrian, vehicle travellers, changes experienced to journey length, amenity, traveller views and driver stress. The County Council requests that these issues are carefully considered in the vicinity of the proposed junction with the A2, particularly around the villages of Shorne, Thong and Higham.

The scoping report has identified recorded PRow located within the boundary of the development area that would be affected by the LTC project. This valuable network of paths provides significant opportunities for outdoor recreation and active travel. The applicant must therefore consider the potential effects of the project on the PRow network and its users, assessing noise, air quality, drainage and visual impacts.

With reference to the National Policy Statement for National Networks (NPSNN), this project provides an opportunity to improve the existing PRow network and develop new links for active travel and outdoor recreation. The creation of new paths and upgrading of existing routes should be considered as positive outcomes of the scheme. The public benefits of such work would compensate for the disruption caused by temporary network closures and potentially offset the loss of any permanent path extinguishments or diversions, which are required to facilitate the delivery of the LTC.

The applicant should be aware of the County Council's Countryside and Coastal Access Improvement Plan, which highlights the lack of existing equestrian provision in this area. The LTC provides an opportunity to address this issue, as new routes with higher user rights could be created within the development area. The potential for establishing new equestrian provision and cycle routes which provide safe alternatives to existing on-road routes should be explored.

Human Health and Wellbeing

The County Council has reviewed the scope in respect to human health and wellbeing and believes it to be comprehensive and inclusive of the areas we would prioritise in terms of public health such as; cardiovascular disease, respiratory disease, effects on wider determinants of health including socioeconomic status, and noise and air quality.

Section 13.7 Methodology

Paragraph 13.7.10 of the Scoping Report states: "The methodology to identify existing non-motorised traffic will be agreed with local authorities." The County Council looks forward to further discussion with Highways England on this in due course.

With regards to the placement of receptors, it is pleasing to note that PRoW have been identified within the scoping report. However, additional thought should be given to routes used by equestrians, as horses are particularly sensitive to noise disturbance.

In order to monitor path use before, during and after the construction phase of the project, it is requested that people counters are installed on PRoW at key gateway locations. Data obtained from these counters can be used to assess the impact of the new road and crossings. It is recommended that electronic people counter sensors are installed, instead of manual surveys, as these counters will be able to operate 24 hours a day and capture sporadic path users.

Section 13.8 Description of Possible Significant Effects on Receptors

Path extinguishments and long term severance of routes should be avoided, in order to prevent fragmentation of the PRoW network. Important links between residential neighbourhoods, community facilities and areas of outdoor recreation, should be preserved. For example, the existing connections between Shorne Woods Country Park and the densely populated urban area of Gravesend are of particularly high value to local residents.

Paragraph 13.8.14 notes that existing PRoW "permanently severed by the Project would be mitigated by the provision of a footbridge or underpass". When designing this new access infrastructure, it is requested that structures are 'future proofed' to accommodate potential users with higher access rights (equestrians and cyclists). For example, underpass routes should have sufficient height clearance for bridleway users and bridges should allow for equestrian loading and include appropriate parapets for such use.

The County Council is currently working in partnership with Natural England to establish the England Coast Path in this area. This is a new national trail walking route that will eventually circumnavigate the entire English coastline, establishing rights for the public to explore the coast. These Coastal Access rights are likely to be in effect during the construction phase of this project, as the coast path is scheduled for completion by 2020.

The Coast Path should not be directly affected by the LTC, as this section of the trail will pass over the proposed new tunnel. However, impacts on the Coast Path will need to be considered if materials and spoil excavated from the project is to be transferred by the sea, as suggested in the scoping report. If materials are to be transported via the River Thames, there would be a requirement for new marine infrastructure, which may then have a direct impact on coastal access.

Section 13.9 Potential Mitigation Measures

It is understood that temporary path closures may be required during the project so that construction work can be completed safely. KCC's PRoW & Access Service would be happy to discuss the process for temporarily closing paths with the applicant.

Efforts should be made to minimise path closures and retain popular routes during the project. Where temporary closures are required, convenient diversion routes should be provided to reduce disruption to path users. Robust information boards explaining temporary access restrictions should be considered for paths that will be closed for long periods.

Furthermore, the impact of the project on quiet rural lanes should be considered in conjunction with the PRoW network, as these roads provide useful connections for equestrians and cyclists travelling between PRoW routes. The project could potentially deter public use of the PRoW network if these road links are designated as haulage routes and vehicular traffic substantially increases along these more rural lanes.

Appendix F – Figures

Appendix F mentions how impacts on the PRoW network will be managed. The networks of paths within Shorne Woods Country Park are not all designated PRoW, most are permissive paths and not formally adopted. Therefore, these paths need to either be mentioned specifically in order to be given the same consideration as the PRoW routes or alternative arrangements for the permissive paths clarified. The current plans for the road will sever the Darnley Trail circular route that links all the local sites around Shorne together using the permissive routes at Shorne Woods to link into the PRoW network, creating a partnership linking Ranscombe, Cobham Woods, Ashenbank Woods and Jeskyns. As this is a key path in the local network and essential in the Darnley Trail, it needs to be included in this section specifically as breaking the link will have a significant impact on access for people.

14 Road Drainage and Water Environment

The County Council is happy that the matter covered within Chapter 14 Road Drainage and Water Environment is appropriate for the assessment of impacts and proposed mitigations.

15 Climate

Section 15.7 Methodology

The County Council would note that any mitigation for surface water runoff increases needs to account for climate change. Climate change predictions are based upon the life-time of the proposed development. Paragraph 15.7.8 states that climate change allowances will be based upon “a maximum design life of 40 years for the highway element of the Project and a design life of 120 years for the tunnel element.” We would expect that the operational life of the development is considered collectively as 120 years. The life span of the *surface* of the highway element would be 40 years as this is when re-surfacing will be required; however, the *roadway carriageway* would expect to still be in service for the design life of the tunnel.

As a result, the County Council would therefore expect that any drainage design accounts for an appropriate climate change allowance for the full operational design life.

As a consultation body, the County Council looks forward to being invited to comment on further documentation prepared and submitted as part of the application for a Development Consent Order. If you require further information or clarification on any matter in this letter, please do not hesitate to contact me.

Yours sincerely,



Barbara Cooper

Corporate Director – Growth, Environment and Transport



**Kent Fire &
Rescue Service**

Headquarters
The Godlands
Tovil
Maidstone ME15 6XB

T 01622 692121
F 01622 611844

To
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Contact
Paul Flaherty
Extension
Date
30th November 2017
E-mail
Paul.flaherty@kent.fire-uk.org
Our ref
Your ref

RESPONSE TO ENVIRONMENTAL STATEMENT FOR LOWER THAMES CROSSING

Dear Sir / Madam,

Further to your letter dated 3rd November 2017 inviting a response from Kent Fire and Rescue Service (KFRS) in relation to the environmental statement relating to the development of the Lower Thames Crossing, I would like to make the following comments on behalf of KFRS:

Paragraph 2.11.2 – This refers to the tunnel design solution. In order to ensure that the design takes account of any firefighting strategy that KFRS may implement I would request that KFRS is involved with any design considerations at an early stage around issues such as fixed installations, fire detection, access arrangements, and facilities to assist with the management of any hazardous materials and that this is reflected in the statement.

Paragraph 2.11.3 - this refers to the drainage capacity of the tunnels and makes reference to the use of a deep pump sump to remove firefighting water. Whilst such a sump system is necessary, KFRS would like to be included in the development of the plans for the system. Specifically KFRS would like to understand the capacity for holding firefighting water run-off. The system design will need to take account of the firefighting strategy, including the use of suppression systems and anticipated use of water by emergency responders. This is important because KFRS may need to introduce firefighting media, such as foam, which has the potential to damage the environment. Therefore, should such a system require the removal of firefighting water once the capacity is reached, the design will need to take account of where this waste water will be removed to, in order to alleviate any environmental impact both during an incident and post incident.

Paragraph 2.11.13 – this refers to special access for emergency responders to the tunnel in the event of an emergency. Whilst KFRS recognise that this will be discussed at the TDSCG I would like to emphasise the importance of ensuring that such an access point is put in place to ensure that KFRS emergency crews can access the tunnel in a timely manner. This



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Chief Executive
Ann Millington

will facilitate a rapid intervention. From an environmental perspective this is important to ensure that we can mitigate the environmental impact of an emergency as early as possible (for example, minimising air pollution as a result of a fire). Without an access junction at the A226 it is anticipated that attendance times to the tunnel or on the tunnel approach network will be increased if the primary access point is via the new junction on the A2.

As well as increased attendance times, all emergency vehicles will be travelling the same route as the general flow of traffic which may also delay emergency service attendance. Any delay in emergency service attendance may result in a longer period of unchecked environmental damage as a result of an incident. There is clearly a need to balance the removal of the proposal for a junction with the A226 with the need to maintain an emergency access route.

Paragraph 2.12.2 – this refers to the use of tunnel boring machines and the associated construction of a sub-station to provide power. I would request that KFRS is sighted on the arrangements for accessing this site and that any associated risk information regarding safe response to the site during an incident is communicated to KFRS.

Whilst I recognise that the environmental statement makes reference to the need to consider emergency response arrangements within the tunnel design, in particular relating to associated environmental impacts, I feel that it would be useful for the statement to reflect some of the additional detail given above.

Yours Sincerely,

By email.

Paul Flaherty
Assistant Director Channel Tunnel and Resilience
Kent Fire and Rescue Service



From: [Martin Tim](#)
To: [Lower Thames Crossing](#)
Subject: Lower Thames Crossing - Scoping Consultation
Date: 09 November 2017 15:46:42

Dear Sir/Madam,

Further to the above, I can confirm that the London Borough of Barking and Dagenham does not have any comments to make on this occasion.

Kind regards.

Tim Martin | Acting Transport and Planning Policy Manager | Be First
9th Floor | Maritime House | 1 Linton Road | Barking | London IG11 8HG
Phone: 020 8227 3939 | Mobile: 07870 278 467
www.befirst.london | @befirstLondon



working on behalf of Barking and Dagenham

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Comments from London Borough of Havering on the Environmental Impact Assessment Scoping Report (Scheme no. HE540039)

Introduction

This response (below) sets out comments from the London Borough of Havering on the Lower Thames Crossing Environmental Impact Assessment Scoping Report (reference no. HE540039).

The comments are provided on an 'officer' basis but will be referred to Members for their informal endorsement.

Havering considers **that it is essential that all the matters raised below are addressed in the preparation of the final ES.**

General comments

It is noted that the Scoping Report does not include a specific section addressing traffic and transport. This is an important omission and **must** be rectified in the ES.

It is also noted that considerable work needs to be undertaken still linked to the construction of the project and concerning how the construction will be delivered. Many aspects of construction have very considerable potential to have adverse impacts on the surroundings to the route and the communities within this. It is essential that the ES has a comprehensive suite of information and measures to deal with and mitigate the adverse impacts of construction. A Construction Code of Practice needs to be incorporated into the ES.

The preparation of the final ES should take place alongside an Equalities Impact Assessment and a Health Impact Assessment and the findings of these should inform the ES.

The ES should include an assessment of socio-economic impacts arising from the proposal particularly in the light of the agricultural and rural activities in the vicinity of the route.

The conclusions reached about 'scoping out' topics (as identified at the end of each section) have been reviewed and the approach is supported.

The comments follow the order of the content of the Scoping Report. If a section of the report is not identified then Havering has no comments on it.

Section 1 Introduction

Reference is made in para. 1.2.5 to existing traffic use of the current crossing. It is understood that all of the traffic assessments / modelling underpinning the project are being revisited.

This should be reflected in the ES. In particular, the further traffic modelling work, and the ES, should both take full account of the growth in traffic that will be associated with the project itself and in delivering the London Mayor's ambitious agenda for growth.

Because of the proximity to the new link road serving the crossing, the A127 is a particular concern because it will remain a key route into / from Havering. This route is already the

subject of considerable work by various stakeholders including Essex County Council and local authorities. Work is being undertaken to support further investment in this corridor.

The improvements in accessibility to markets beyond Havering are likely to increase traffic on this route. The Council is aware from the significant 'over-run' in the programme for the Transport for London A127 Ardleigh Green Bridge replacement project that this corridor is highly sensitive to un-planned traffic delays.

The ES must look at how traffic growth generally will impact on the existing highways network (both TfL and Havering) in regard to severance and congestion (as well as environmental impacts such as additional noise, disturbance and vibration). This must encompass considering all modes (private vehicles, cycling, walking and public transport).

The ES should consider the overlap between this project and the proposals for improvement at Junction 28 of the M25 where it meets the A12.

The ES needs to reflect that the new junction with the M25 Motorway will be in the London Borough of Havering and not Essex (para.1.4.9).

Section 1.5 gives the impression that the scheme will only have impacts south of the River Thames as there is very little context provided for the parts of the route north of the river. This must be revised in the ES to better reflect that the scheme will have extensive impacts north of the River including in Havering.

It is accepted that the ES is not in itself a policy document but it is important that the EIA recognises that the part of the route in Havering is in the Green Belt because this provides an important context for considering the visual impact of the proposal (especially the proposed junction of the new link road and the M25). National planning policy requires that a very careful and sensitive approach is taken to development in the Green Belt so as to protect and maintain its character and appearance. Havering strongly considers that this test is applicable to the part of the route in Havering's Green Belt and all aspects of the scheme in Havering should be designed and delivered to address this.

Specific text should be included in the ES to take account of and recognise the potential impact of the new link road and junction on the rural residential settlements of North and South Ockendon. Both settlements include extensive heritage assets and a Conservation Area focussed on North Ockendon. This will be consistent with the current work looking at the scope to remodel the new junction to help mitigate the impact of the junction arrangements on these settlements.

Reference must be added to the route passing through the important Thames Chase Community Forest as it travels north from Tilbury to the new junction with the M25 as this is an important emerging asset for the community.

Thames Chase Community Forest organisation should be fully engaged in taking the project forward (as well as the Forestry Commission) given the importance of this project to delivering landscape and recreational improvements across an extensive area of east London and south Essex. Thames Chase Community Forest can be contacted at : Thames Chase Community Forest, Broadfields Farm Cottage, Pike Lane, Upminster RM14 3NS.

Section 2 :The Project

Reference must be made in the ES to the current feasibility work on the new link road joining the M25 from underneath rather than from a bridge over the motorway.

The ES must recognise that the lighting proposed for the new junction with the M25 will need to be carefully designed to ensure that it does not adversely impact on the adjoining residential settlements at North and South Ockendon.

Regarding Section 2.10 Flood Risk Management, Havering has undertaken a Strategic Flood Risk Assessment to support the new Havering Local Plan and a copy can be provided to inform the preparation of the final ES.

Havering is very concerned that much of the detail about how the project will be constructed is still absent (Section 2.13 Construction Works) and this prevents a full assessment of the potential impact of the scheme and means that mitigation measures cannot be identified and secured. This prevents a full understanding of the impact of the scheme being assessed. These details must be resolved and reflected in the final ES.

Havering has particular concerns about the adverse implications for traffic on the existing highway network that will arise as a result of the construction phase of the project. Havering's roads are already very busy and the network in the borough and further afield lacks resilience during periods of heavy traffic or when unexpected events happen or there is bad weather.

Two particular concerns must be addressed in both the further work preparing the ES and linked to the delivery of the scheme :

- 'satellite' compounds or worksites requiring access from borough roads in Havering have the potential to be a safety risk for other road users (including pedestrians) and may result in structural damage to the borough's highway assets. This was noticeable during the recent widening of the M25 motorway, for example.
- During the period when the new link road for the crossing is 'tied' into the M25 motorway, there will be the likelihood that partial or full closures of the motorway may impact on the adjoin borough highway network.

Section 2.16 Contaminated Land should reflect that the route passes across a significant area of landfill in the vicinity of North and South Ockendon.

There are major hazard gas pipelines in Thurrock close to the boundary with Havering and these do not appear to have been addressed in the Scoping Report. The ES must include an assessment of risk to these from construction work linked to the project.

Section 3 The reasonable alternatives considered

The ES must take full account of the implications and all impacts associated with widening a section of the M25 to improve traffic flow (para. 3.2.2). This should encompass traffic and environmental matters.

Section 4 : Consultation

Reference must be included in the ES to the extensive programme of stakeholder meetings facilitated over the development of the project by means of the Stakeholder Advisory Panel fora.

Section 6 : Air quality

Havering agrees in principle with the proposed scope of works linked to assessing air quality during the construction and operational phases.

It is noted in Section 6.5 that an NO₂ diffusion tube monitoring survey will be undertaken for a twelve month period at locations representative of public exposure. Given that this survey will inform the baseline and model verification, Havering wants to be provided with the map showing the diffusion tube monitoring locations, so that it can comment on the selected locations.

As stated in Section 6.7 Methodology (para. 6.7.3) a construction dust assessment (CDA) should be undertaken, in order to assess the air quality impacts of dust during construction. An assessment of the construction vehicle emissions may also be required. Mitigation measures to control dust and emissions would be required and should be included in the Construction Environmental Management Plan (CEMP) at a later stage.

As stated in Section 6.8 Description of Possible Significant Effects on Receptors, a detailed air quality assessment should be undertaken to assess the air quality impacts during the operational phase of the development. Local, regional impact assessment, WebTAG appraisal and Compliance Risk Assessment with the EU Directive on ambient air quality should be undertaken, in accordance with the relevant guidance documents.

There should be early involvement and consultation with London Borough of Havering prior to the commencement of the air quality assessment to agree on the methodology which will be followed (e.g. modelling, model verification etc.).

Section 7 : Cultural Heritage

The ES must reflect that Place Services (linked to Essex County Council) provide advice on heritage matters to London Borough of Havering as well as the other stakeholders identified in para. 7.3.4.

Place Services have been engaged to review the Scoping Report for Havering and their comments are set out below (as they were provided to the Council).

A primary requirement is an assurance that identified stakeholders will not be consulted in isolation. Any future meetings regarding heritage should include representatives of all areas irrespective of local planning authority boundaries to ensure a consistent approach. It would be beneficial for Archaeology, Historic Buildings and Landscape to be considered and consulted together given the interrelation of the disciplines.

The London Borough of Havering is in the process of adopting new criteria for assessing Non-Designated Heritage Assets (NDHAs) for inclusion onto their Local Heritage List. As the Local Heritage List progresses, the Lower Thames Crossing EIA should take into account any new additions adopted from now until the application is submitted. The London Borough of Havering should endeavour to update their Local Heritage List as soon as practically possible to ensure the LTC applicants can conduct a thorough analysis of NDHAs.

The Zone of Visual Influence (ZVI) and viewpoints for analysis should be agreed with the LBH Heritage Advisors and Historic England as well as neighbouring local planning authorities. Once determined, it would be advantageous for joint-visits to key viewpoints to be arranged to facilitate discussions and negotiations of potential impacts/mitigation.

At present, the LTC principle Heritage Consultant is scheduled to conduct an analysis of heritage assets within 50m of the proposed route with an additional 20m buffer zone. This will be limited to assessing the potential impact of the proposed upon the fabric of these heritage assets – not their setting which will be conducted separately. It would be preferable for this area to be increased to 75m with a 25m buffer zone. This should also include principle delivery routes to/from the construction zones to ensure the increased number of heavy goods vehicles over a prolonged period of time is assessed. Secondary 'reactive' direct impacts to fabric such as the necessity for secondary glazing to alleviate noise pollution should also be considered at an early stage.

The LTC principle Heritage Consultant will undertake an analysis of heritage assets within the search area with the view to better understand the heritage assets. It would be preferable for Designated Heritage Assets within this area to be assessed by Historic England as part of their Enhanced Advisory Service. This would help give greater weight/confidence to these findings and allow them to be incorporated onto the National Heritage List for England.

In addition to cross referencing noise and vibration assessments the heritage report needs to reference potential light pollution which may arise.

Assessments should always assess 'worst case scenario' for all elements of the proposed. Whilst it is beneficial to have an open dialogue with LTC throughout the pre-application process, all material for review should be submitted with a minimum two-week consultation period to ensure meaningful discussions.

Section 8 : Landscape

The preparation of the ES must include consultation and engagement with both the Forestry Commission and the Thames Chase Community Forest as their activities are already an important component of the landscape north of the River Thames.

Table 8.2 Landscape and Townscape Resource should include London Borough of Havering in the stakeholder/Local Authority column given that the route passes through Havering's Green Belt.

References to land identified as 'green belt within the rural urban fringe' (Section 8.8 Description of Possible Significant Effects on Receptors) are inappropriate and must be amended. As set out, it implies that these are less important parts of the Green Belt.

To support its current Local Plan work Havering has undertaken an assessment of its Green belt to ensure that it all meets the statutory purposes of the Green Belt. The study concludes that all of the Green Belt satisfies these tests. The text should be amended to reflect that the route passes through the Havering Green Belt and that its proximity to the built up area is irrelevant.

Section 9 : Biodiversity

The ES must recognise that the railway corridor close to the route is identified as a Site of Importance for Nature Conservation.

Section 10 : Geology and Soils

The proposed scope of works relating to the approach to assessing the risks posed by land contamination is agreed.

The development area is in proximity to two historical landfills in Havering :

- Groves Farm / Hall Farm (adjacent to the boundaries of the development area, as shown on figure 10.2, sheet 4 of 5);
- Stubbers Outdoor Pursuits Centre (approximately 400m to the west of the development area).

No other significant contaminative land uses have been identified across or in proximity which could pose a significant risk to human health or the environment during the construction and operational phases of the proposed development.

As stated in the report (para. 10.2.8), an assessment of ground instability should be undertaken to support the final ES, as the route crosses an area where compressibility and uneven settlement hazards are probably present.

As stated in the report (para.10.2.9), an extensive ground investigation should be undertaken to support the ES in order to assess and mitigate the risks posed by land contamination. Taking account of the location of the above landfills extensive gas monitoring should be carried out to characterise the gas regime within and in proximity to the development area and address any ground gas migration risks. It is noted that gas monitoring data from 1983 shows high concentrations of methane at Groves Farm / Hall Farm.

As stated in the report (para.10.9.5), the management of excavated soils and waste will be carried out, in accordance with a Construction Environmental Management Plan (CEMP) and Materials Management Plan (MMP) which will be undertaken at a later stage.

Havering wants to be involved prior to the commencement of the investigation works, in order to agree on the design of the ground investigation (e.g. soil sampling strategy, gas monitoring strategy etc.)

The ES should take account of 'winnable' minerals reserves in proximity to the route and the scope for excavating these prior to construction should be considered so that they are not 'sterilised' unnecessarily.

Section 11 : Materials

Preparation of the ES must include engagement with the East London Waste Authority (Section 11.3 Consultations Undertaken and proposed) as this body is responsible for the management of waste in east London including Havering.

Section 12 : Noise and Vibration

Havering supports the methodology proposed for the noise and vibration assessments as it includes all the relevant British standards and guidance required for such a project.

Havering is concerned, though, about the use of defined numerical values to determine the impact of the scheme particularly with reference to noise. For the scheme in its entirety (and particularly in quieter rural areas such as where the route passes through Havering), the impact would be better determined/assessed by looking at the change in noise levels at the agreed receptor points, whether this be positive or negative.

The methodology covers both the construction phase and the operational phase of the project.

Havering wants early working/consultation with Highways England and their consultants to determine and agree sensitive receptors within this borough for both the preparation of the EIA and the position of long term and short term monitoring stations/positions.

Havering agrees with the classification of receptors proposed.

The impact of the scheme will only be able to be determined once the full ES has been completed based on the chosen route. Havering will want to work with Highways England and their consultants from the earliest opportunity and consistently both before and during the production of the ES to ensure its interests are maintained and protected.

Havering will expect public consultation to be an integral element of this and it is expected that it will be both timely and accurate.

The appointed contractor will be expected to follow the procedures set out in COPA74, S61 and make and make a prior application for all works of construction and demolition.

Section 13 : People and communities

As previously mentioned (above), a health impact assessment must be undertaken (para. 13.2.13).

Assessment of the project against people and communities must include the established residential communities in the North and South Ockendon settlements which will be in very close proximity to the proposed new junction with the M25. Residents in these settlements are likely to be very significantly affected by the construction of the new link road and junction with the M25. It is essential that the ES addresses fully the need for measures to mitigate the adverse impact of the scheme and its construction.

The assessment must also take account of the travelling community in this area..

Section 16 : Cumulative effects

Explicit reference should be made to the proposal from Highways England for re-modelling the M25 / A12 Junction.

Section 17 : Proposed structure of the Environmental Statement

Comments above will need to be reflected in the ES especially the importance of a specific section on traffic and transport (See Introduction comments).

Section 18 : Transboundary screening

Table 18.1 should recognise that the project is partly located in the London Borough of Havering.

Contact :

Martyn Thomas
Development and Transport Planning Manager
Development Service
London Borough of Havering
Tel : 01708 432845 and martyn.thomas@haverling.gov.uk

November 29 2017



Marine Management Organisation

Scoping Opinion

Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (“the Regulations”)

Title: Lower Thames Crossing (“the Project”)

Applicant: Highways England

MMO Reference: DCO/2015/00001

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1 Proposal

The route would connect the A2 in Kent, east of Gravesend, crossing under the River Thames by means of two bored tunnels, before joining the M25 south of Junction 29. Between the A2 and A13 Junctions the route is currently proposed as a dual three lane carriageway; north of the A13 the route would be a dual two-lane carriageway. The improvements would include widening of the M2/A2 and the M25 at each end of the route. The total length of the route, including M2/A2 and M25 widening, would be approximately 31km, with approximately 3.5km in tunnel.

Currently, the Project is being designed as a high-standard free-flowing route, with grade separated junctions, and safety levels matching the highest standards of the network, and would provide a motorway-quality journey for drivers.

The main carriageway horizontal and vertical alignments would be designed to the Design Manual for Roads and Bridges (DMRB) TD 09/93 Table 3 for highway link design. The design speed would be 120km/h (70mph speed limit).

From the A2, the new route would pass under Thong Lane between Gravesend and Thong and would cross the Southern Valley Golf Course towards the A226. The approach to the tunnel portal from the south would be in deep chalk cutting. The proposed southern portal is located to the east of Chalk Village with the precise location still under assessment.

The tunnel crossing is located to the east of Chalk Village on the south of the River Thames and to the west of East Tilbury on the north side. The tunnel would pass under the Thames Medway Canal, North Kent railway line, the Thames Estuary and Marshes Special Protection Area (SPA) and Ramsar site / South Thames Estuary and Marshes Site of Special Scientific Interest and the Metropolitan Police Service Specialist Training Centre at Gravesend on the south of the River Thames.

On the north side of the river, the route would run to the west of East Tilbury and between Chadwell St Mary and Linford. The route would cross the A13 to the west of Orsett at the location of the existing A13/A1089 junction. To the north of the A13 the route would pass to the west of Orsett and then turn to the west passing north of South Ockendon before connecting with the M25 between Junctions 29 and 30 via a new junction with north facing slip roads.

Junctions are being considered at the following locations:

- A new junction with north-facing slip roads on the M25 between Junctions 29 and 30.
- A modified junction with the A13/A1089 in Essex.
- A new junction east of Tilbury.
- A new link road is provided from the new junction east of Tilbury to the west which would connect to Tilbury.
- A new junction with the A2 to the east of Gravesend.

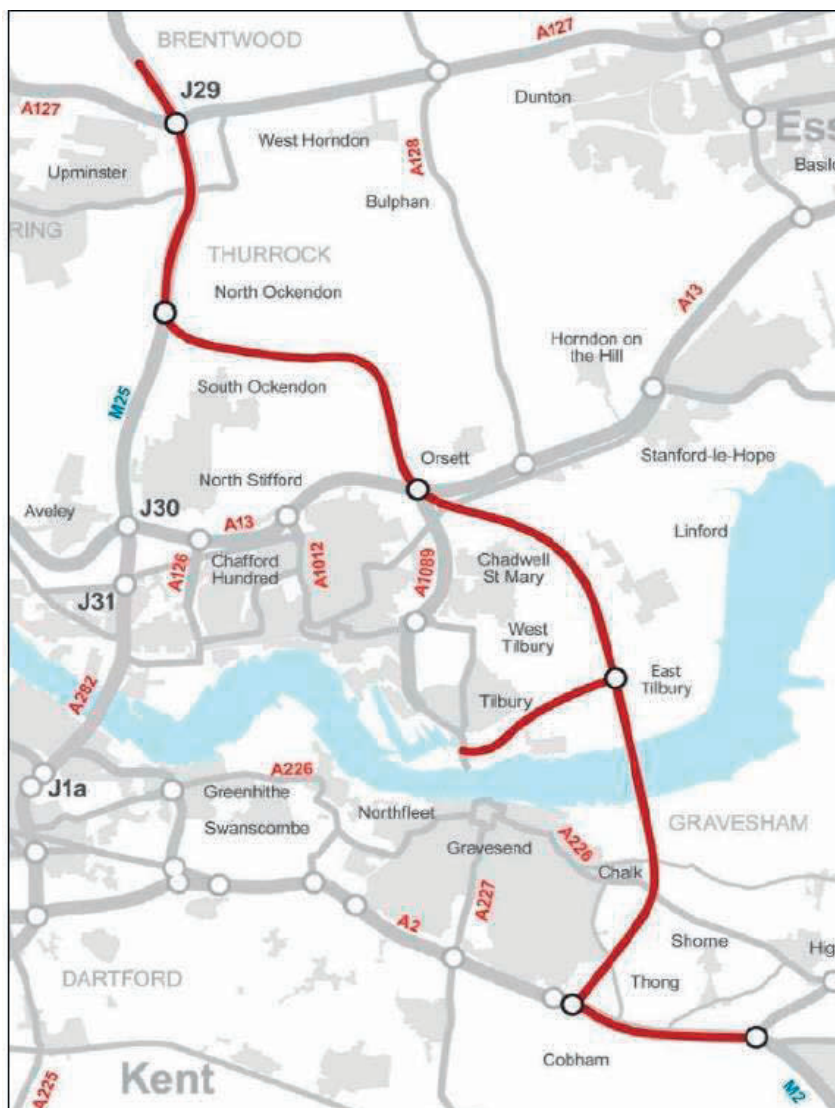
1.1 Project Background

The Lower Thames Crossing (LTC) is a proposed new crossing of the River Thames east of London that will connect Kent and Essex. For more than 50 years, the Dartford Crossing has provided the only road crossing of the Thames Estuary east of London.

2 Location

The proposed project will be located through a number of areas as displayed in Figure 1 below.

Figure 1: Indicative Lower Thames Crossing Route



3 Environmental Impact Assessment (EIA)

Council Directive 2011/92/EU (as amended) on the assessment of the effects of certain public and private projects on the environment (“the EIA Directive”) aims to protect the environment and the quality of life by ensuring that projects which are likely to have significant environmental effects by virtue of their nature, size or location are subject to an EIA before permission is granted.

The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (“the Regulations”) transpose the EIA Directive into UK law for marine licence applications.

Pursuant to Regulation 5 of the Regulations, it was agreed between the MMO and Highways England that the proposed works constitute an EIA development under Schedule A1 of the Regulations, specifically:

Schedule A1 paragraph 12

“Construction of a new road of four or more lanes, or realignment or widening of an existing road of two lanes or less, so as to provide four or more lanes, where such new road, or realigned or widened section of road, would be 10 kilometres or more in a continuous length.”

Therefore, the application required for the proposed works for a marine licence under Part 4 of the Marine and Coastal Access Act 2009 (“the Act”) will be accompanied by an Environmental Statement (“ES”).

4 Scoping Opinion

Pursuant of regulation 13 of the Regulations, the Planning Inspectorate have requested a Scoping Opinion from the MMO and, therefore, a Scoping Report entitled “*Lower Thames Crossing, Scheme Number HE540039, Environmental Impact Assessment Scoping Report*” has been submitted to the MMO for review.

The MMO agrees with the topics outlined in the Scoping Report and, in addition, we outline that the following aspects be considered further during the EIA and must be included in any resulting Environmental Statement.

4.1 Habitats Directive / Wild Birds Directive / Nature Conservation

4.1.1 Thames Estuary and Marshes SPA

The MMO welcome the inclusion of this designated site in the scoping report and welcome that it is screened in until such times it can be screened out.

4.1.2 North Downs Woodland SAC

The MMO welcome the inclusion of this designated site in the scoping report and welcome that it is screened in until such times it can be screened out.

4.1.3 Thames Estuary and Marshes Ramsar

The MMO welcome the inclusion of this designated site in the scoping report and welcome that it is screened in until such times it can be screened out.

4.1.4 Holehaven Creek pSPA (currently a SSSI)

The MMO welcome the inclusion of this designated site in the scoping report and welcome that it is screened in until such times it can be screened out.

4.1.5 Thames Estuary rMCZ

The MMO welcome the inclusion of this designated site in the scoping report and welcome that it is screened in until such times it can be screened out.

4.1.6 Mucking Flats and Marshes SSSI

Although this site has been included in some tables in the submitted scoping report, it is not clear the outcome of the assessment. If this site has been screened out, an explanation should be given to this effect.

4.1.7 South Thames Estuary and Marshes SSSI

Although this site has been included in some tables in the submitted scoping report, it is not clear the outcome of the assessment. If this site has been screened out, an explanation should be given to this effect.

4.2 Benthic Ecology

- a) In Table 9-10, there is no predicted direct habitat loss to subtidal coarse sediment or subtidal sand while there are predicted losses on the various other intertidal habitats. Further detail should be provided in the ES including clarity regarding the nature and location of the physical impacts of the project.

- b) In Appendix C, while it is prudent to follow the JNCC Marine Monitoring Handbook guidelines for the intertidal habitat mapping survey methods, consideration should be given to allocating sampling stations according to visual changes in sediment type or obvious habitat differences as opposed to following a strategic grid of stations. The former is more likely to ensure that all types of habitats/biotopes are captured as part of the characterisation survey.

4.3 Marine Processes

- a) The MMO note that no specific section has been dedicated to marine processes but that they have been noted within the report. The MMO recommend that this should be included as a separate chapter in the ES.
- b) The MMO welcome the approach that these will be screened in until such a time that they can be screened out of further assessment.
- c) The assessment should ensure that it explicitly addresses whether groundwater or surface drainage into the Thames is materially affected.
- d) The assessment should also ensure that the potential requirement for new Thames transport infrastructure is fully assessed including, if necessary, consideration of potential impacts on flow around any new or substantially altered jetties. This may require modelling if there is potential to affect the stability of nearshore sediments in any important areas.
- e) The assessment should address the potential for changes to the marine process supporting the identified substrates i.e. quantified impacts on pathways to impact on ecological receptors being, in this case, sediment transport / stability.
- f) The groundwater baseline diagram is presented in low resolution and it is difficult to interpret some symbols. This diagram should be made clearer if it is to be included in the ES.

4.4 Noise and Vibration

- a) No specific detail has been provided regarding the impact of underwater noise and vibration on receptors. This should be included within the ES as a section of the Biodiversity chapter rather than the Noise and Vibration chapter, which focusses on noise and vibrations in air.
- b) Table 9-9: 'Potential Operational Effects on Potentially Important Ecological Features' does not consider that aquatic invertebrates will be affected by noise disturbance. The MMO recommend that the potential impacts on marine invertebrates are taken forward for assessment.
- c) Table 9-2 identifies potential marine ecological surveys, including an underwater noise survey and modelling to assess impacts to fish and marine mammals. The MMO would expect to see more information on these surveys.
- d) The report does not state whether an unbiased statistical accuracy assessment will be undertaken as a result of the underwater noise survey, and modelling to assess impacts on fish and marine mammals. The survey and modelling is to be based on the potential jetty location for 2 weeks survey (timing to be confirmed with MMO, PLA, EA) to be conducted once in Year 2 (2018). This should be confirmed in detail in the ES.
- e) The MMO support that the impacts of night time working on fish and marine mammals will be considered as part of the EIA, should the construction and operation of a jetty be required for the Project.
- f) Cumulative impacts in relation to underwater noise should be considered.

- g) At this stage there does not appear to be much assessment of the impact of underwater noise and vibration on receptors in the vicinity of the project before year 2 of the project when the two-week trial is undertaken. The MMO recommend further evaluation, assessment and identification of receptors are included in the ES so that mitigation measures can be identified and included.
- h) The MMO would expect that underwater noise and vibration due to the construction of a jetty (if required), increased boat traffic, and tunnel drilling operations be considered in the ES, and the potential impacts on sensitive marine receptors (e.g. fish, marine invertebrates and marine mammals) are assessed.

4.5 Seascape / Landscape

The MMO welcome the inclusion of the Kent Downs Area of Outstanding Natural Beauty (AONB) in the assessment but defer comment on this to Natural England and the Kent Downs AONB unit team.

4.6 Fish Ecology and Fisheries

The MMO would expect an assessment of impacts to fish and fisheries be included in the ES.

4.7 Archaeology / Cultural Heritage

The MMO are content with the 2km buffer used to detect impacts to Archaeology and Cultural Heritage but would defer on this matter to Historic England.

4.8 Navigation / Other Users of the Sea

The MMO would expect that impacts to navigation and other users of the sea are considered in the ES and a navigational risk assessment produced to inform final assessments.

4.9 Cumulative Impacts & In-Combination Impacts

The MMO would expect the cumulative and in-combination impacts in all chapters to be considered with the addition of that mentioned in this response.

4.10 Risk to Human Health

In order to comply with the recent change in the legislation, the MMO would expect to see a full consideration on how the proposed project will impact human health.

4.11 Risk of Major Accidents and Disasters Relevant to the Project (including those caused by Climate Change)

In order to comply with the recent change in the legislation, the MMO would expect to see a full consideration on how the surrounding environment would be impacted should a major accident/disaster destroy or damage the new route but particularly the bored tunnel.

4.12 Sediment Quality

- a) The MMO support the approach that a desk study has been proposed to review public documents on sediment contaminants, including data requested from the

EA, MMO and PLA. Where data is lacking sediment sampling should be used to identify areas of risk.

- b) As the decision on the necessity of dredging and disposal activities has not yet been decided, the MMO are unable to provide comment on the conclusions relating to this. However, the MMO approve of the proposed plan to develop a 'baseline' regarding sediment quality in the area near to potential jetty construction and associated dredging, as well as the proposed methods to establish this.
- c) The MMO approve of the project aim to minimise the volume of waste by utilising material for beneficial re-use where possible, including the separation and potential treatment of contaminated land where necessary. Details of this should be included in the ES.
- d) A thorough description of how evidence will be gathered is not provided at this stage, however, the report states (in section 14.5.9) that "*the requirement for subsequent chemical analysis at a potential construction jetty location(s) would be discussed and agreed with consultees*", which provides assurances that standard practices will be followed.
- e) Details of an unbiased statistical accuracy assessment have not been provided at this stage. However, section 14.5.11 states that "*the preliminary hydrodynamic modelling carried out at the options stage of the Project would be revisited and updated as necessary*". Therefore, the MMO expect that an unbiased statistical accuracy assessment has been detailed during the options stage, and will be further explored if it is deemed necessary to utilise or update this model for any construction activities. This assessment must be included in the ES.

4.13 Mitigation

Details on mitigation are low but the MMO support the proposed likely measures that would be used. Once the potential impacts are more understood then appropriate mitigation can be implemented. Should any mitigation be identified during the assessment and reporting then this should be fully detailed and considered within the ES.

4.14 General Comments

- a) The MMO support the approach to screen aspects in until such a time where they can be screened out of further assessment.
- b) The MMO welcome further consultation prior to anything within its remit being scoped out of further assessment.
- c) Sensitive marine receptors that are not taken forward for assessment should be fully justified and supported in the report.

4.15 Conclusion

The topics highlighted in this scoping opinion must be assessed during the EIA process and the outcome of these assessments **must** be documented in the ES in support of the marine licence application. This statement, however, should not necessarily be seen as a definitive list of all EIA requirements. Given the scale and programme of these planned works other work may prove necessary, especially as detailed design is further defined.



Heather Hamilton
Marine Licensing Case Officer
1st December 2017



Maritime &
Coastguard
Agency

Navigation Safety Branch
Bay 2/25
Spring Place
105 Commercial Road
Southampton
SO15 1EG

The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Tel: +44 (0) 2038172426
E-mail: Navigationsafety@mca.gov.uk

Your ref: TR010032-000007
Our ref:

28 November 2017

By email to: LowerThamesCrossing@pins.gsi.gov.uk

Dear Sir/Madam

Scoping Consultation in preparation of an Environmental Statement for the Proposed Lower Thames Crossing

Thank you for your letter dated 3rd November 2017 inviting the Maritime and Coastguard Agency (MCA) to comment on the Environmental Impact Assessment Scoping Report for the proposed Lower Thames Crossing.

From the information provided, it appears that the only aspect for MCA to consider with regards to the safety of navigation will be as a result of any infrastructure required in the marine environment. These will likely require a marine licence, at which time the MCA will be invited to comment on the application from a navigation safety perspective.

It would be useful to see in the Environmental Statement the expected marine infrastructure requirements, consideration of their impact on the safety of navigation for both commercial and recreational craft, and proposed risk mitigation methods.

In addition, I note that the proposed crossing location falls within the jurisdiction of the Port of London Authority. The MCA would like to point the developers in the direction of the Port Marine Safety Code (PMSC). They will need to liaise and consult with the Port of London Authority to develop a robust Safety Management System (SMS) for the project under this code.

The sections that we feel cover Navigational safety under the PMSC and its Guide to Good Practice are as follows:

From the Guide to Good Practice, section 7 Conservancy, a Harbour Authority has a duty to conserve the harbour so that it is fit for use as a port, and a duty of reasonable care to see that the harbour is in a fit condition for a vessel to be able to

use it safely. Section 7.7 Regulating harbour works covers this in more detail and have copied the extract below from the Guide to Good Practice.

7.7 Regulating harbour works

7.7.1 Some harbour authorities have the powers to license works where they extend below the high watermark, and are thus liable to have an effect on navigation. Such powers do not, however, usually extend to developments on the foreshore.

7.7.2 Some harbour authorities are statutory consultees for planning applications, as a function of owning the seabed, and thus being the adjacent landowner. Where this is not the case, harbour authorities should be alert to developments on shore that could adversely affect the safety of navigation. Where necessary, consideration should be given to requiring the planning applicants to conduct a risk assessment in order to establish that the safety of navigation is not about to be put at risk. Examples of where navigation could be so affected include:

- high constructions, which inhibit line of sight of microwave transmissions, or the performance of port radar, or interfere with the line of sight of aids to navigation;
- high constructions, which potentially affect wind patterns; and
- lighting of a shore development in such a manner that the night vision of mariners is impeded, or that navigation lights, either ashore and onboard vessels are masked, or made less conspicuous.

There is a British Standards Institution publication on Road Lighting, BS5489. Part 8 relates to a code of practice for lighting which may affect the safe use of aerodromes, railways, harbours and navigable Inland waterways.

Yours faithfully,

Helen Croxson
Navigation Safety Branch

Decision Notice

MC/17/3826



Gail Boyle
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Planning Service
Physical & Cultural Regeneration
Regeneration, Culture, Environment &
Transformation
Civic Headquarters
Gun Wharf
Dock Road
Chatham
Kent ME4 4TR
Telephone: 01634 331700
Facsimile: 01634 331195
Email:

Applicant's Name Gail Boyle The
Planning Inspectorate

planning.representations@medway.gov.uk

TOWN & COUNTRY PLANNING ACT 1990

Town & Country Planning (Development Management Procedure) (England) Order 2015

Location: LOWER THAMES CROSSING

Proposal: Scoping consultation under The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 - proposed new crossing

I refer to your letter of consultation regarding the above and would inform you that the Council **RAISES NO OBJECTION** to it.

1 Medway Council's main interests and would want the 'applicant' Highways England (HE) to note the following:

- The impact of the development on the estuarine environment, including both flora, fauna and habitats, as well as overall bird movements within the RAMSARS and SPA's that fall within Medway Councils jurisdictions.
- Future reports should include the expected level of congestion on the A2/M2 over its expected lifetime, a study on the potential for an increase through Medway and its potential impact on the Air Quality Monitoring Area's.

- It will be crucial to ensure that the Lower Thames Area Model inputs capture the scale of growth in Medway. The Council intends to consult on a development strategy, including site allocations, in early 2018; therefore Highways England will need to ensure that the latest information is used in modelling work. It should be noted that Medway has developed an Aimsun Model with a calibrated 2016 base year. It will be important to ensure that the Lower Thames Area Model outputs can be used to undertake sensitivity testing to inform the emerging Local Plan and wider strategic infrastructure planning. Medway Council would welcome ongoing engagement with Highways England on this matter.
- The Council would welcome a comprehensive assessment of the reasonable alternatives considered in the Environmental Statement in order to understand the implications for investment and regeneration opportunities as a result of these changes to the design.

Your attention is drawn to the following informative(s):-

This opinion has been reached in consideration of your letter received on 3 November 2017.

Signed



David Harris
Head of Planning
Date of Notice 1 December, 2017



Ministry
of Defence

Defence Infrastructure Organisation

Safeguarding Department
Statutory & Offshore

The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

Defence Infrastructure Organisation
Kingston Road
Sutton Coldfield
West Midlands
B75 7RL

Tel: +44 (0)121 311 3818 Tel (MOD): 94421 3818

Fax: +44 (0)121 311 2218

E-mail: DIO-safeguarding-statutory@mod.uk

www.mod.uk/DIO

15 November 2017

Your reference: TR010032-000007

Our reference: 10041800

Dear Sir/Madam

MOD Safeguarding – SITE OUTSIDE SAFEGUARDING AREA (SOSA)

Proposal: The Lower Thames Crossing will be a new road crossing connecting Essex and Kent.

Location: East of Gravesend and Tilbury

Grid Ref: 546296, 176342

Thank you for consulting Defence Infrastructure Organisation (DIO) on the above proposed development. This application relates to a site outside of Ministry of Defence safeguarding areas. I can therefore confirm that the Ministry of Defence has no safeguarding objections to this proposal.

I trust this adequately explains our position on this matter.

Yours sincerely



Debbie Baker

From: [AULD, Alasdair E](#)
To: [Lower Thames Crossing](#)
Subject: RE: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation (SG25374)
Date: 07 November 2017 14:22:41

The proposed development has been examined from a technical safeguarding aspect and does not conflict with our safeguarding criteria. Accordingly, NATS (En Route) Public Limited Company ("NERL") has no safeguarding objection to the proposal.

However, please be aware that this response applies specifically to the above consultation and only reflects the position of NATS (that is responsible for the management of en route air traffic) based on the information supplied at the time of this application. This letter does not provide any indication of the position of any other party, whether they be an airport, airspace user or otherwise. It remains your responsibility to ensure that all the appropriate consultees are properly consulted.

If any changes are proposed to the information supplied to NATS in regard to this application which become the basis of a revised, amended or further application for approval, then as a statutory consultee NERL requires that it be further consulted on any such changes prior to any planning permission or any consent being granted.

Yours faithfully,

Alasdair Auld
On behalf of NERL Safeguarding Office

From: Lower Thames Crossing [mailto:LowerThamesCrossing@pins.gsi.gov.uk]
Sent: 03 November 2017 11:47
Subject: (SG25374) TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation

Mimecast Attachment Protection has deemed this file to be safe, but always exercise caution when opening files

Dear Sir/Madam

Please see the attached correspondence on the proposed Lower Thames Crossing.

Please note the deadline for consultation responses is 01 December 2017 and is a statutory requirement that cannot be extended.

Kind Regards,

Michael Breslaw
EIA and Land Rights Advisor
Major Applications and Plans

The Planning Inspectorate, 3D, Temple Quay House, Temple Quay, Bristol BS1 6PN
Direct line: 0303 444 5063
Helpline: 0303 444 5000
Email: Michael.Breslaw@pins.gsi.gov.uk

Web: <https://infrastructure.planninginspectorate.gov.uk/> (National Infrastructure Planning)

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SUBMITTED VIA EMAIL TO:

LowerThamesCrossing@pins.gsi.gov.uk

Spencer Jefferies
Development Liaison Officer
Land & Acquisitions

spencer.jefferies@nationalgrid.com

Tel: +44 (0)7812 651481

www.nationalgrid.com

1st December 2017

Dear Sir/Madam,

Proposed application by Highways England (the applicant) for an Order granting Development Consent for the Lower Thames Crossing

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

This is a joint response by National Grid Electricity Transmission plc (NGET) and National Grid Gas plc (NGG)

I refer to your red line boundary in the Lower Thames Crossing Environmental Impact Assessment – Scoping Report. Having reviewed the plans, I would like to make the following comments:

Electricity Transmission assets affected by the Order:

- 4YN 400kV Overhead Transmission Line – Kingsnorth – Northfleet East
Northfleet East – Singlewell
- 4VG 400kV Overhead Transmission Line – Kingsnorth – Tilbury
Grain – Kingsnorth
- Singlewell 400kV Substation Site
- Decommissioned underground cable running along the M2 (green line, appendix 2, plan 1)
- YYJ 400kV Overhead Transmission Line – Tilbury – West Thurrock 1
Littlebrook – Tilbury 2
- ZJ 400kV Overhead Transmission Line – Coryton Sth – Tilbury 400 – Tilbury 275
Rayleigh main – Tilbury 400 – Tilbury 275
- ZB 275kV Overhead Transmission Line – Tilbury – Warley 1
Tilbury – Warley 2

Gas Transmission assets affected by the Order:

- FM 18
- FM 5

Summary

National Grid along with representatives of Highways England have identified that some assets will need to be diverted in order to progress the development. National Grid will continue to liaise with a number of Lower Thames Crossing teams in order to achieve what has been set out.

I hope the above information is useful. If you require any further information please do not hesitate to contact me.

Yours sincerely

Spencer Jefferies



(Submitted

Electronically)

Appendix 1

Electricity Infrastructure

The following points should be taken into consideration:

- National Grid's Overhead Line/s is protected by a Deed of Easement/Wayleave Agreement which provides full right of access to retain, maintain, repair and inspect our asset
- Statutory electrical safety clearances must be maintained at all times. Any proposed buildings must not be closer than 5.3m to the lowest conductor. National Grid recommends that no permanent structures are built directly beneath overhead lines. These distances are set out in EN 43 – 8 Technical Specification for “overhead line clearances Issue 3 (2004) available at: http://www.nationalgrid.com/uk/LandandDevelopment/DDC/devnearohl_final/appendixIII/applIII-part2
- If any changes in ground levels are proposed either beneath or in close proximity to our existing overhead lines then this would serve to reduce the safety clearances for such overhead lines. Safe clearances for existing overhead lines must be maintained in all circumstances.
- The relevant guidance in relation to working safely near to existing overhead lines is contained within the Health and Safety Executive's (www.hse.gov.uk) Guidance Note GS 6 “Avoidance of Danger from Overhead Electric Lines” and all relevant site staff should make sure that they are both aware of and understand this guidance.
- Plant, machinery, equipment, buildings or scaffolding should not encroach within 5.3 metres of any of our high voltage conductors when those conductors are under their worse conditions of maximum “sag” and “swing” and overhead line profile (maximum “sag” and “swing”) drawings should be obtained using the contact details above.
- If a landscaping scheme is proposed as part of the proposal, we request that only slow and low growing species of trees and shrubs are planted beneath and adjacent to the existing overhead line to reduce the risk of growth to a height which compromises statutory safety clearances.
- Drilling or excavation works should not be undertaken if they have the potential to disturb or adversely affect the foundations or “pillars of support” of any existing tower. These foundations always extend beyond the base area of the existing tower and foundation (“pillar of support”) drawings can be obtained using the contact details above

To view the Development Near Lines Documents. Please use the link below:

<http://www2.nationalgrid.com/uk/services/land-and-development/planning-authority/development-near-ohl/>

Gas Infrastructure

The following points should be taken into consideration:

- National Grid has a Deed of Grant of Easement for each pipeline, which prevents the erection of permanent / temporary buildings, or structures, change to existing ground levels, storage of materials etc.

Pipeline Crossings:

- Where existing roads cannot be used, construction traffic should ONLY cross the pipeline at previously agreed locations.
- The pipeline shall be protected, at the crossing points, by temporary rafts constructed at ground level. The third party shall review ground conditions, vehicle types and crossing frequencies to determine the type and construction of the raft required.
- The type of raft shall be agreed with National Grid prior to installation.
- No protective measures including the installation of concrete slab protection shall be installed over or near to the National Grid pipeline without the prior permission of National Grid.
- National Grid will need to agree the material, the dimensions and method of installation of the proposed protective measure.
- The method of installation shall be confirmed through the submission of a formal written method statement from the contractor to National Grid.
- Please be aware that written permission is required before any works commence within the National Grid easement strip.
- A National Grid representative shall monitor any works within close proximity to the pipeline to comply with National Grid specification T/SP/SSW22.
- A Deed of Consent is required for any crossing of the easement

Cables Crossing:

- Cables may cross the pipeline at perpendicular angle to the pipeline i.e. 90 degrees.
- A National Grid representative shall supervise any cable crossing of a pipeline.
- Clearance must be at least 600mm above or below the pipeline.
- Impact protection slab should be laid between the cable and pipeline if cable crossing is above the pipeline.
- A Deed of Consent is required for any cable crossing the easement.
- Where a new service is to cross over the pipeline a clearance distance of 0.6 metres between the crown of the pipeline and underside of the service should be maintained. If this cannot be achieved the service shall cross below the pipeline with a clearance distance of 0.6 metres.

General Notes on Pipeline Safety:

- You should be aware of the Health and Safety Executives guidance document HS(G) 47 "Avoiding Danger from Underground Services", and National Grid's specification for Safe Working in the Vicinity of National Grid High Pressure gas pipelines and associated installations - requirements for third parties T/SP/SSW22.
- National Grid will also need to ensure that our pipelines access is maintained during and after construction.
- Our pipelines are normally buried to a depth cover of 1.1 metres however; actual depth and position must be confirmed on site by trial hole investigation under the supervision of a National Grid representative. Ground cover above our pipelines should not be reduced or increased.

- If any excavations are planned within 3 metres of National Grid High Pressure Pipeline or, within 10 metres of an AGI (Above Ground Installation), or if any embankment or dredging works are proposed then the actual position and depth of the pipeline must be established on site in the presence of a National Grid representative. A safe working method agreed prior to any work taking place in order to minimise the risk of damage and ensure the final depth of cover does not affect the integrity of the pipeline.
- Excavation works may take place unsupervised no closer than 3 metres from the pipeline once the actual depth and position has been confirmed on site under the supervision of a National Grid representative. Similarly, excavation with hand held power tools is not permitted within 1.5 metres from our apparatus and the work is undertaken with NG supervision and guidance.

To view the SSW22 Document, please use the link below:

<http://www.nationalgrid.com/uk/LandandDevelopment/DDC/GasElectricNW/safeworking.htm>

To download a copy of the HSE Guidance HS(G)47, please use the following link:

<http://www.hse.gov.uk/pubns/books/hsg47.htm>

Further information in relation to National Grid's gas transmission pipelines can be accessed via the following internet link:

<http://www.nationalgrid.com/uk/LandandDevelopment/DDC/gastransmission/gaspipes/>

Date: 01 December 2017
Our ref: 230863
Your ref: TR010032-000007



Gail Boyle
The Planning Inspectorate
3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

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

T 0300 060 3900

By email only, no hard copy to follow.

Dear Gail Boyle

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

Thank you for your letter of the 3 November 2017 consulting Natural England on the proposed scope of the Environmental Impact Assessment for the Lower Thames Crossing scheme.

Natural England welcomes the constructive pre-application engagement that has taken place to date and we acknowledge that the preferred route which is being progressed through this consultation is the option which appears to avoid direct impacts to statutory designated nature conservation sites.

Our detailed comments in relation to the Scoping Report are provided in Annex One appended to this letter which I trust are helpful and we look forward to continuing the close working relationship established with the Applicant as the scheme progresses towards the Development Consent Order submission.

I trust this information is helpful; if you have any queries regarding this letter please do not hesitate to contact me on 0208 0266 064 or by email to sean.hanna@naturalengland.org.uk. For any new consultations, or to provide further information on this consultation please send your correspondence to consultations@naturalengland.org.uk.

Yours sincerely

Sean Hanna

Sean Hanna
Lead Adviser
Sussex and Kent Team

cc Alex Vinci, Lower Thames Crossing
Philippa Lewis, Highways England
Katie Miller, Kent Downs AONB Unit
Caroline Parker, Forestry Commission
Niall Connolly, Environment Agency

Annex One: Natural England's advice in relation to the EIA Scoping Consultation for the Lower Thames Crossing (reference TR010032-000007)

1 General comments

- 1.1 Case law¹ and guidance² 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.
- 1.2 Natural England welcomes the proposed approach to the Environmental Impact Assessment (EIA) and the proposed format of the Environmental Statement (ES). We acknowledge that further refinement of the scheme will occur over the coming months and consider that the approach detailed within the EIA Scoping Report allows sufficient flexibility to accommodate scheme refinements within the application boundary line detailed within the report.
- 1.3 Natural England advises that the potential impact of the proposal upon features of nature conservation interest and opportunities for habitat creation/enhancement should be included within this assessment in accordance with appropriate guidance on such matters. Guidelines for Ecological Impact Assessment (EclA) have been developed by the Chartered Institute of Ecology and Environmental Management (CIEEM) and are available on their website.

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

- 1.4 The National Planning Policy Framework sets out guidance in Section 118 on how to take account of biodiversity interests in planning decisions and the framework that local authorities should provide to assist developers.
- 1.5 The EIA should include a full assessment of the potential impacts of the development on local landscape character using [landscape assessment methodologies](#). We encourage the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.
- 1.6 The landscape assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescales of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at Scoping stage would be likely to be a material consideration at the time of determination of the planning application.

2 Statutory designated nature conservation sites

- 2.1 The ES should thoroughly assess the potential for the proposal to affect designated sites

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

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

at the national, European and international level. European sites (eg designated Special Areas of Conservation and Special Protection Areas) fall within the scope of the Conservation of Habitats and Species Regulations 2017. In addition paragraph 118 of the National Planning Policy Framework requires that potential Special Protection Areas, possible Special Areas of Conservation, listed or proposed Ramsar sites, and any site identified as being necessary to compensate for adverse impacts on classified, potential or possible SPAs, SACs and Ramsar sites be treated in the same way as classified sites.

- 2.2 The proposal has the potential to result in direct and indirect impacts to a number of Sites of Special Scientific Interest (SSSIs) detailed below. Information on the SSSIs and their special interest features can be found at www.magic.gov.uk. The ES 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 measures as may be required in order to avoid, minimise or reduce any adverse significant effects. Further site specific guidance is provided below.
- 2.3 In addition to the SSSIs, there are a number of Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Wetlands of International Importance under the Ramsar Convention (Ramsar Sites) detailed below which may be directly and indirectly impacted. The Natura 2000 network site conservation objectives are available on our internet site³ which should be helpful when undertaking the impact assessment.

South Thames Estuary and Marshes SSSI, Thames Estuary and Marshes SPA and Ramsar Site

- 2.4 Natural England welcomed the announcement that the preferred crossing of the Thames would be in a bored tunnel which minimises the direct impacts to the Thames Estuary and Marshes Special Protection Area (SPA) and Wetland of International Importance under the Ramsar Convention (Ramsar Site).
- 2.5 The ES should fully consider the likely impacts from the proposal to species and habitats associated with these designated sites; in particular the ES should include an assessment of the following for land within the designated sites and also land outside the designated sites supporting species associated with them (often referred to as functionally linked land):
- Alterations to hydrological regimes within the grazing marsh habitats during both the construction and operational phases
 - The impacts from any pits/ventilation shafts that may be required to facilitate the construction of the tunnel
 - Noise, lighting and visual disturbance impacts during the construction period from plant, machinery and personnel
 - Noise and lighting impacts during the operational phase
 - Surface water run-off and disposal of liquid from de-watering, both during the construction and operation phases
 - Air quality impacts during the construction and operation phases (please see Section 3 of this letter for further information)

Mucking Flats and Marshes SSSI, Thames Estuary and Marshes SPA and Ramsar Site

- 2.6 As with the coastal designated sites south of the River Thames in Kent, the ES should fully consider the likely impacts from the proposal to species and habitats associated with the coastal sites in Essex. In particular the ES should include an assessment of the following for land within the designated sites and also the functionally linked land:

³ Available to download at <http://publications.naturalengland.org.uk/category/6490068894089216>

- Noise, lighting and visual disturbance impacts during the construction period and operational phase from plant, machinery and personnel
- Direct and indirect impacts to the foreshore, intertidal and other areas of functionally linked land

Shorne and Ashenbank Woods SSSI

- 2.7 It is unclear from the information provided whether the widening of the A2 between the new junction adjacent to Claylane Wood and the M2 will result in direct impacts to the SSSI. We understand that the proposal is to widen the existing road within the confines of the existing highway boundary but from discussions with the Applicant it is not known at present how many additional lanes are to be added in each direction to accommodate the increased traffic volume. Natural England advises that as a first principle of the design of the scheme should be to avoid the loss of SSSI habitat and we welcome the scheme's avoidance of Great Crabbles Wood SSSI.
- 2.8 Notwithstanding the potential for direct impacts detailed above, the widened A2 will bring the road into much closer proximity to the SSSI than is presently the case and the ES should fully assess the indirect impacts from air quality (please see Section 3 of this letter for further details), lighting and urbanising effects (from litter, for example). The ES should fully detail these impacts along with the measures that will be provided to mitigate (and where necessary compensate) these impacts. Detailed habitat and botanical studies are likely to be required to inform these.

Hangman's Wood and Deneholes SSSI

- 2.9 The linking road to the new crossing has the potential to result in indirect impacts to Hangman's Wood and Deneholes SSSI. The interruption or severance of key flight lines for bats associated with the site should be fully considered as part of the ES. Similarly, impacts from lighting of the route also need to be fully considered.
- 2.10 Hibernation sites are often important autumn swarming sites for significant numbers of bats so we would recommend that hibernation and swarming surveys are undertaken to inform the impact assessment. An understanding of key flightlines for bats is also likely to be required to ensure that the scheme does not sever them.
- 2.11 If impacts to important flightlines are likely to occur, then detailed avoidance, mitigation and where necessary compensatory measures will need to be implemented. These could include the provision of living bridges or the creation of dark vegetated corridors for example.

Thorndon Park SSSI

- 2.12 Given the proposed location of the connecting roads from the M25 to the proposed crossing itself, Natural England recommends that the ES includes a detailed assessment of potential air quality impacts on Thorndon Park SSSI. Further details are provided in Section 3 of this letter.

Recommended Marine Conservation Zones

- 2.13 The former Thames Estuary recommended Marine Conservation Zone (rMCZ) has now been split into two separate sites; the first site (Upper Thames) stretches from Richmond Bridge to Battersea Bridge and is recommended as it is an important area for smelt (*Osmerus eperlanus*). The ES should consider the indirect impacts to this site since smelt are a migratory species found along the whole of the tidal Thames. The most

sensitive time for this species is spring; smelt can be impeded from migrating through the river, for example by sediment plumes or underwater noise.

- 2.14 The second site (Swanscombe) stretches from The Queen Elizabeth II Bridge to Columbia Wharf/Grays. The boundary for the Swanscombe rMCZ has been determined to fit more closely around records of the tentacled lagoon-worm (*Alkmaria romijni*) for which there is currently considered to be a gap in the ecological network. Other broadscale habitats that were initially considered when the whole of the tidal Thames was an rMCZ are included within the recommended Swanscombe site.
- 2.15 The information on these rMCZs is in draft status only and forms part of Natural England's scientific advice on the sites that are under consideration for Tranche 3 of the MCZ designations. Defra and the Minister will make final decisions regarding which sites and which features will go forward to a public consultation. Whilst these sites are not currently a material consideration, we would recommend that the ES considers the potential impacts to them. The sites and features that are put forward to consultation in the future will become a material consideration at that stage.
- 2.16 Further information about Defra's commitment to Tranche 3 of the MCZ designations is available at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492784/mcz-update-jan-2016.pdf
- 2.17 In terms of the proposed marine surveys, Natural England agrees that an analysis of sediment type (particle size analysis) and sediment contaminants will be required for works associated with the potential jetty works. Natural England also agrees that there will be a requirement for intertidal and subtidal benthic ecology studies. The requirements for ecological surveys should however be determined after the hydrodynamic and sediment modelling has been completed since this will inform impact pathways and potential receptors. Requirements to be determined include survey area, timings, methodology, etc. Survey needs should be based on predicted impacts to receptors that occur in all phases of the scheme, including construction and operational phases. For example, there should be a consideration of increased vessel movements and dredging needs as well as any footprint loss associated with new structures.
- 2.18 From the information provided in the biodiversity section of the scoping report (section 9), the only aspect of the scheme identified as having the potential to generate marine impacts is from the potential jetty works. If other structures or pathways for marine impacts are identified as the scheme progresses then further survey requirements may be required and we will of course be please to provide more detailed advice as required.
- 2.19 In addition to assessing the impacts of the jetty during its installation and throughout the construction phase for the crossing, consideration should also be given to the long term impacts of a new/expanded jetty that may continue after the project has finished, for example the long term maintenance dredging requirements.
- 2.20 In addition, if any of the works associated with the scheme have the ability to impact water levels or flows in the Thames, as well as water quality, then this needs to be assessed within the EIA, and potentially within any HRA/MCZ assessments.

3 Air quality

- 3.1 Natural England welcomes the confirmation that air quality impacts to designated sites will be assessed during both the construction and operational phases of the development. Much of the emphasis in the proposed air quality assessment understandably relates to traffic borne impacts, both from plant and machinery during the construction phase and

vehicles using the road during the operational phases. In addition to traffic generated dust and emissions, the ES should fully detail the potential air quality impacts from any construction processes such as batching plants or delivery of material by boat, for example, along with the mitigation measures proposed.

- 3.2 Natural England notes that consideration of air quality impacts once the scheme is operational in relation to designated nature conservation sites will be based upon the guidance within the Design Manual for Roads and Bridges. This would mean consideration of impacts would be undertaken within a 200 metre corridor either side of the route where the modelling shows that the scheme will result in an increase of 200 heavy duty vehicles or 1000 light duty vehicles compared to the current annual average daily traffic (AADT).

Whilst this approach provides a helpful coarse screening tool to evaluate whether further investigation is required, the increase in vehicle movements will need to be considered in combination with other plans or projects where impacts to Special Protection Areas, Special Areas of Conservation or Wetlands of International Importance under the Ramsar Convention (Ramsar Sites) may result. We would therefore suggest that the Applicant liaises with the Local Planning Authorities to ensure that any transport modelling fully considers the in-combination impacts of this proposal with developments proposed within their local plans.

Natural England also advises that the Applicant considers the recommendations of the Judgment in *Wealden District Council v. Secretary of State for Communities and Local Government, Lewes District Council and South Downs National Park Authority* [2017] EWHC 351 (Admin) when undertaking the air quality impact assessment.

- 3.3 In addition to the potential for impacts to designated nature conservation sites within 200 metres of the application boundary, consideration also needs to be given within the ES to potential impacts to sites adjacent to the wider motorway and trunk road network and other local roads where an increase in AADT is likely to occur. In the absence of traffic modelling information, it is not possible for Natural England to provide an exhaustive list of designated sites which should be considered at this stage but based upon our local knowledge the following sites as a minimum are likely to require the impacts from air quality to be considered:

- North Downs Woodland SAC
- Queendown Warren SAC
- Darenth Woods SSSI
- Halling to Trottscliffe Escarpment SSSI
- Hangman's Wood and Deneholes SSSI
- Holborough to Burham Marshes SSSI
- Thorndon Park SSSI
- Wouldham to Detling Escarpment SSSI

- 3.4 When the traffic modelling data showing how traffic volumes will alter on the road network outside the application boundary becomes available, Natural England will be pleased to work with the Applicant to refine the scope of designated sites which need to be considered as part of the air quality impact assessment.
- 3.5 In addition to the consideration of air quality impacts to designated sites, the ES should also include a detailed assessment of the potential impacts that may result to other sensitive ecological receptors such as ancient woodland, priority habitats and the habitats supporting protected or priority species which are susceptible to changes in air quality, along with details of the proposed mitigation measures.

4 Habitats Regulations Assessment

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

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

Where a LSE is identified, the Environmental Statement should include a chapter detailing the necessary information for the competent authority to undertake the Appropriate Assessment, often referred to as a 'Statement to Inform an Appropriate Assessment'.

- 4.2 Natural England welcomes the studies that are underway or proposed in relation to habitats which are outside the coastal designated SPAs and Ramsar Sites but which may support birds associated with the designations (functionally linked land). Impacts to any functionally linked land should also be considered as part of any Appropriate Assessment.
- 4.3 We advise the consideration of a LSE should not be confined to designated sites within close proximity to the application boundary where wider impacts could occur. For example, the increase in traffic to the wider road network a considerable distance from the application boundary as detailed within Section 3 of this letter could result in a LSE and therefore would need to be fully considered within any Appropriate Assessment.

5 Protected landscapes

- 5.1 South of the River Thames, the application boundary in part lies within the Kent Downs Area of Outstanding Natural Beauty (AONB) and has the potential to significantly impact the special qualities of the AONB.
- 5.2 Natural England welcomes the reference to the National Character Areas within paragraph 8.2.1 of the Scoping Report along with the relevant local plan policies and the 3rd Edition of the Guidelines for Landscape and Visual Impact Assessment. Given that the southern section of the scheme is either within the Kent Downs AONB or its setting, we would also recommend that during the assessment process, due consideration is given to the AONB Management Plan⁴.
- 5.3 Natural England attended a joint site visit with the Applicant's landscape specialists and the Kent Downs AONB Unit on Monday 6 November and we agreed further viewpoints to be considered as part of the Landscape and Visual Impact Assessment in the vicinity of the A2 and Jeskyn's Farm Community Woodland. Similarly, additional suggested locations for the tranquillity studies were discussed. We anticipate that these will be confirmed through ongoing discussions with the Applicant in the near future.
- 5.4 The widening of the A2 from the new junction in the vicinity of Claylane Wood and the M2 has the potential to remove a significant amount of mature woody vegetation from the central reserve and land adjacent to both the east and westbound carriageways. This vegetation currently screens significant sections of the A2 (along with the Channel Tunnel Rail Link/High Speed 1 rail line) from key publically accessible areas of the AONB. I

⁴ Available at <http://www.kentdowns.org.uk/guidance-management-and-advice/management-plan>

understand that it is not yet known how many additional lanes will be required to accommodate the increased volume of traffic on the A2 as a result of the proposed crossing but the EIA should fully consider these impacts. We will be pleased to continue working with the Applicant over the coming months on this assessment as more details become available.

- 5.5 In addition to the potential direct and indirect impacts to the AONB and its setting within the application boundary, the EIA should fully consider the potential visual and tranquillity impacts that may result along the A2/M2 corridor, the A249 Detling Hill and the A229 Bluebell Hill. These routes are likely to see a significant increase in traffic flow, particularly heavy duty vehicles, travelling to and from the channel ports as a result of the Lower Thames Crossing, as Detling and Bluebell Hills (which cross the Kent Downs AONB in an approximately north/south direction) are the main links from the A2/M2 to the M20.
- 5.6 Much of the landscape section of the Scoping Report appears to focus on visual impacts; Natural England recommends that a full tranquillity assessment for people recreating within publically accessible areas of the AONB and its setting is included within the ES. Details of the mitigation measures to be implemented should also be included.
- 5.7 The Scoping Report details the measures that are to be implemented to mitigate the landscape impacts. As part of the environmental legacy for this project, Natural England recommends that opportunities to deliver landscape enhancements to restore areas previously degraded by the A2/M2 widening and the Channel Tunnel Rail Link/High Speed 1 Rail Line should be provided; we would be pleased to work with the Applicant and the Kent Downs AONB Unit to help realise the Applicant's environmental legacy ambitions. Opportunities to work with other developments such as the A2 Bean to Ebbsfleet improvements, the London Resort and the Ebbsfleet Garden City should also be sought to maximise the environmental benefits that can be achieved by working in partnership. We would be pleased to advise further on these strategic opportunities (both in relation to landscape and biodiversity).
- 5.8 In addition to impacts to the AONB, there are likely to be local landscape impacts along the route and Natural England recommends the views of the Local Planning Authority are sought and fully considered in relation to these impacts.
- 5.9 We advise the ES should also consider whether there is land in the area affected by the development which qualifies for conditional exemption from capital taxes on the grounds of outstanding scenic, scientific or historic interest. An up-to-date list can be obtained at www.hmrc.gov.uk/heritage/lbsearch.htm.

6 Public rights of way

- 6.1 Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where the development could help to achieve their aims.
- 6.2 Natural England has a duty to provide coastal access on foot around the whole of the English coast and is aiming to complete this by 2020. This is a new National Trail with an associated margin of land predominantly seawards of this, for the public to access and enjoy. Natural England takes great care in considering the interests of both land owners/occupiers and users of the England Coast Path, aiming to strike a fair balance

when working to open a new stretch. We follow an approach set out in the approved [Coastal Access Scheme](#) and all proposals have to be approved by the Secretary of State. We would encourage any proposed development to include appropriate provision for the England Coast Path to maximise the benefits this can bring to the area. We suggest that the development includes provision for a walking or multi-user route, where practicable and safe. This should not be to the detriment of nature conservation, historic environment, landscape character or affect natural coastal change. We would welcome discussions as to how this could best be achieved within the development proposals and would also be happy to provide suggestions as to the most appropriate areas for coastal access on site. Further details of the England Coast Path in the vicinity of the application boundary can be found on the [Natural England website](#).

- 6.3 The EIA should also consider potential impacts on access land, public open land, and rights of way in the vicinity of the development. Appropriate mitigation measures should be incorporated for any adverse impacts to pedestrians and non-motorised vehicle users. Natural England also recommends reference to the relevant Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

7 Soils and agricultural land quality

- 7.1 Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the NPPF. We also recommend that soils should be considered under a more general heading of sustainable use of land and the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF.

- 7.2 Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society, for example as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. It is therefore important that the soil resources are protected and used sustainably. The Applicant should consider the following issues as part of the Environmental Statement:

1. The degree to which soils are going to be disturbed/harmed as part of this development and whether 'best and most versatile' agricultural land is involved. This may require a detailed survey if one is not already available. For further information on the availability of existing agricultural land classification (ALC) information see www.magic.gov.uk. Natural England Technical Information Note 049 - [Agricultural Land Classification: protecting the best and most versatile agricultural land](#) also contains useful background information.
2. If required, an agricultural land classification and soil survey of the land should be undertaken. This should normally be at a detailed level, for example one auger boring per hectare, (or more detailed for a small site) supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, ie 1.2 metres.

The Environmental Statement should provide details of how any adverse impacts on soils can be minimised. Further guidance is contained in the [Defra Construction Code of Practice for the Sustainable Use of Soil on Development Sites](#).

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

- 8.1 Natural England welcomes the engagement to date with the Applicant on the scope of

species surveys. We will be pleased to continue advising on the detailed studies and will work closely with the Applicant to help them develop a robust avoidance, mitigation and compensatory habitat strategy for all species that will be adversely impacted.

- 8.2 For mobile species such as bats where key flight lines or access to foraging areas will be severed, the scheme should ensure measures to maintain habitat connectivity, for example, through the provision of land bridges, are detailed within the ES.
- 8.3 The ES should assess the impact of each phase of the proposal on all protected species including, for example, great crested newts, reptiles, birds, water voles, badgers and bats.
- 8.4 In addition, there are known records of a number of marine species afforded protection under the Wildlife and Countryside Act within the tidal Thames including the tentacled-lagoon worm, seahorses and the lagoon sea slug and these should be considered as part of the EIA.
- 8.5 Whilst the scoping report contains brief details on the survey methodologies for protected (and priority species), Natural England will continue to offer detailed advice to the Applicant on the scope and detailed methodology of the surveys as part of our ongoing dialogue.

9 Habitats and species of principal importance

- 9.1 Natural England welcomes the confirmation within the Scoping Report that the EIA will consider the potential for both direct and indirect impacts to habitats and species of principal importance.
- 9.2 The ES should thoroughly assess the impact of the proposals on habitats and species listed as 'Habitats and Species of Principal Importance' within the England Biodiversity List, published under the requirements of Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Section 40 of the NERC Act 2006 places a general duty on all public authorities, to conserve and enhance biodiversity. Further information on this duty is available at <https://www.gov.uk/guidance/biodiversity-duty-public-authority-duty-to-have-regard-to-conserving-biodiversity>.
- 9.3 Government Circular 06/2005 states that Biodiversity Action Plan (BAP) species and habitats, 'are capable of being a material consideration...in the making of planning decisions'. Natural England therefore advises that survey, impact assessment and mitigation proposals for Habitats and Species of Principal Importance should be included in the ES. Consideration should also be given to those species and habitats included in the relevant Local BAP.
- 9.4 Natural England advises that a habitat survey (equivalent to Phase 2) is carried for the scheme, in order to identify any important habitats present. In addition, ornithological, botanical and invertebrate surveys should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present. The ES should include details of:
 - Any historical data for the site affected by the proposal (eg from previous surveys);
 - Additional surveys carried out as part of this proposal;
 - The habitats and species present;
 - The status of these habitats and species (eg whether priority species or habitat);
 - The direct and indirect effects of the development upon those habitats and species;
 - Full details of any mitigation or compensation measures that might be required.
 - Full details of any enhancement measures that are to be delivered

- 9.5 The Section 41 list includes six priority woodland habitats, which will often be ancient woodland, with all ancient semi-natural woodland in the South East falling into one or more of the six types. Information about ancient woodland can be found in Natural England's standing advice http://www.naturalengland.org.uk/Images/standing-advice-ancient-woodland_tcm6-32633.pdf.
- 9.6 Ancient woodland is an irreplaceable resource of great importance for its wildlife, its history, and the contribution it makes to our diverse landscapes. Local authorities have a vital role in ensuring its conservation, in particular through the planning system. The ES should have regard to the requirements under the NPPF (Paragraph 118) which states:
- 'Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss.'*
- 9.7 Natural England acknowledges that the preferred route has tried to minimise the direct loss of ancient woodland, particularly through the avoidance of Great Crabbles Wood SSSI. The application boundary however appears to encompass areas of ancient woodland, the direct loss of which will have both biodiversity and landscape impacts. The nature and scale of the direct and indirect impacts to ancient woodlands that will result from the proposal are currently unclear. We would however recommend that as a first principle, the detailed design should aim to avoid impacts to ancient woodland and other habitats of nature conservation importance to avoid biodiversity and landscape impacts. If impacts cannot be fully avoided, compensatory habitat provision will be required and it would appear appropriate for this to be delivered in conjunction with other projects such as the A2 Ebbsfleet to Bean improvements. Natural England will of course continue to provide advice on impacts to ancient woodland alongside colleagues from the Forestry Commission as the scheme progresses towards the submission stage.
- 9.8 We would be pleased to advise the Applicant on the scope and methodology of the surveys for priority habitats and species, particularly in relation to the requirement for invertebrate surveys along the Essex coastline, as part of our ongoing dialogue with the ecology team.

10 Regionally and locally important wildlife sites

- 10.1 The ES will need to consider any impacts upon local wildlife and geological sites. Local Sites are identified by the local wildlife trust, geoconservation group or a local forum established for the purposes of identifying and selecting local sites. They are of county importance for wildlife or geodiversity. The ES should therefore include an assessment of the likely impacts on the wildlife and geodiversity interests of such sites. The assessment should include proposals for mitigation of any impacts and if appropriate, compensation measures. Contact the local wildlife trust, geoconservation group or local sites body in this area for further information.
- 10.2 Natural England notes Section 9.6.5 details that 'habitats and species associated with local wildlife sites and local nature reserves are considered to have local importance'. Whilst this approach appears to be in accordance with CIEEM's Guidelines for Ecological Impact Assessment, information available on the assemblage of invertebrate species within some of the Essex local wildlife sites suggests they may be of national importance. Natural England therefore recommends that the assignment of ecological value should be undertaken once all of the ecological information is available and this should be site specific. We will of course be pleased to advise the Applicant further on this when the survey results are available.

11 Projects to be considered as part of the cumulative impact assessment

- 11.1 The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):
- a. existing completed projects;
 - b. approved but uncompleted projects;
 - c. ongoing activities;
 - d. plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
 - e. plans and projects which are reasonably foreseeable, ie projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.
- 11.2 Natural England welcomes the list of projects contained with Appendix D 'Other Development Matrix for Cumulative Effects Assessment' which will be considered as part of the cumulative assessment. Specific projects that Natural England is currently aware of which we consider should form part of the cumulative impact assessment are:
- A2 Bean to Ebbsfleet junction and road improvements (NSIP development)
 - M2 Junction 5 improvements (particularly in relation to the Kent Downs AONB) (potentially an NSIP development)
 - Tilbury Energy Centre (NSIP development)
- 11.3 On a more general note, Natural England recommends that the existing and emerging housing allocations within the relevant Local Plans should also be included within the table, particularly in relation to the potential in-combination effects from traffic generated air quality impacts.
- 11.4 Natural England also recommends that the views of the Local Planning Authorities should be sought in relation to potential developments that should form part of the cumulative effects assessment as they may be aware of other developments that are likely to come forward in the near future.

12 Mitigation measures and environmental enhancements

- 12.1 Natural England welcomes the commitment from the Applicant to deliver a lasting environmental legacy from this project which we advise should be aspirational and visionary in its approach. In addition to the required mitigation and compensatory habitat provision measures that may be required for impacts to habitat and/or species, Natural England recommends that the scheme should deliver a net benefit for biodiversity and the protected landscape whilst helping to facilitate people's access to and enjoyment of their local environment. Such enhancements should consider terrestrial, aquatic and marine habitats and species.
- 12.2 Options for reconnecting habitats through the creation of new semi-natural habitat or the creation of living bridges should be fully explored. A living bridge (or bridges) may also help to mitigate some of the landscape impacts associated with the proposal. Enhancements to public rights of way should also be fully considered. The ES should fully detail the environmental enhancements that will be provided to realise the Applicant's aspiration.

- 12.3 The high-level principles of mitigation detailed within Section 9.9 of the Scoping Report appear appropriate at this stage in the absence of information on the impacts. Natural England will continue to work with the Applicant as the scheme progresses to help ensure an appropriate mitigation strategy can be achieved.
- 12.4 As mentioned previously, Natural England recommends that due consideration is given by the Applicant to working closely with other major projects on both sides of the Thames to deliver a coherent, landscape scale mitigation and enhancement strategy.
- 12.5 Where off-site compensation will be required for any of the habitats or species impacted by the development, the long-term security and management of the site(s) needs to be secured and we recommend that this should be detailed within the ES.

From: [Lucy Owen](#)
To: [Lower Thames Crossing](#)
Subject: TR010032-000007 Scoping Consultation - Lower Thames Crossing (DC813)
Date: 30 November 2017 08:31:07

FAO: Gail Boyle

Thank you for your letter dated 3 November 2017 inviting the Port of London Authority (PLA) to comment on the information that it considers should be provided in the Environmental Statement (ES) for the Lower Thames Crossing.

The PLA is the statutory harbour authority for the tidal Thames between Teddington and the North Sea. Its statutory functions include responsibility for conservancy, dredging, maintaining the public right of navigation, controlling vessel movements and the provision of moorings and its consent is required for the construction or carrying out of all works and dredging in the river. As the Authority responsible for licensing river works and moorings, the PLA has special regard to their continued viability for unimpeded use by the PLA's licensees. The PLA's functions also include the promotion of the use of the river as an important transport corridor for London.

Tunnel Design

It is understood that the Lower Thames Crossing would connect the A2 in Kent, crossing under the River Thames by means of two bored tunnels, before joining the M25 south of Junction 29. At least 3 km of the route would be in tunnel, with cut and cover tunnel approaches. A twin bored tunnel is proposed with the external diameter of each tunnel bore proposed to be approximately 15.8m. There is no indication in the Scoping Report of the depth of the tunnel below the river bed, an issue of critical importance to the PLA due to the potential implications for users of the River Thames. The ES must therefore address the depth of the tunnel under the River Thames. Whilst the project does not appear to include possible intervention or protection from the river it may include ground treatment from below. The ES must provide details of any scour protection/rock armour that the applicant may be placing on top of the tunnel and any ground treatment.

It must also be confirmed whether the applicant would be looking for an exclusion zone(s) around the tunnel and if so, whether there would be any limitations in the area. For example, would there be a limitation on anchoring due to the depth of the tunnel which would impact on river users? Would the applicant be looking to temporarily or permanently extinguish the public right of navigation? Any extinguishment should be justified and be the minimum necessary.

It is noted that the tunnel would involve permanent land take of the PLA's land. Discussions will be needed with the PLA about this and any land take should be justified and be the minimum necessary.

Tunnel Alignment

The Scoping Report identifies at paragraph 2.2.7 that a number of junctions are being considered including a new junction east of Tilbury and a new link road. The views of the Port of Tilbury on these matters should be sought to ensure that both the existing port and the proposed Tilbury2 scheme are appropriately served. Discussions should also take place with London Gateway to ensure that the project appropriately addresses the concerns raised by them about the A13 interface.

Use of the River/Materials

The Scoping Report does not commit to river use but instead highlights at paragraph 2.12.5 that methods of transport of excavated material may be by road, river or rail. The PLA believes that use of the water is the best and most sustainable option. If river transport was to occur, the Applicant envisages that it would be by barges which could require infrastructure in the Thames. The ES should clearly set out the applicant's consideration and commitments to river use including, not only the transport of excavated material but also construction materials (such as tunnel lining segments). Projections should be provided for each aspect, including the sizes and types of vessels involved. For example it may be possible to use coasters to transport material away from the construction sites.

Given the location of the tunnel it is also recommended that a full analysis of potential wharves in the area which could be utilised in connection with the delivery of construction and waste materials is undertaken. The ES should demonstrate how the use of the river for the transport of construction and waste materials is to be maximised in line with planning policy.

Clearly once the river use commitments are known by the Applicant then this will need to be reflected consistently throughout all the ES chapters.

It is noted at the moment that the applicant is unclear whether an existing jetty would be required or whether an existing jetty would be re-used, the ES will therefore need to consider both alternatives. If a new jetty is proposed or significant alterations proposed to an existing structure then a reference design will be required to inform the scope of hydrodynamic assessments.

A Navigational Risk Assessment will be required, which in-line with the approach taken to the Silvertown Tunnel, may at this stage need to be a preliminary risk assessment, with more detailed risk assessments being undertaken once more detail is known.

Environment

Whilst the PLA's comments and environmental consideration of the project is limited to the important sites, habitats and species within the PLA's jurisdiction, clearly some sites, habitats and species rely on connections outside of the PLA's jurisdiction in order to maintain good or improve status within it, to create a coherent network of ecological functioning habitats along the Thames.

Air Quality

Potential impacts from use of the river during construction will be assessed qualitatively based on the number of vessel movements, local site conditions and the location of sensitive receptors within 200m, and by applying professional judgement. Whilst the matter has not been scoped out, it is noted that at this stage the applicant considers it unlikely that there will be significant emissions. Given that paragraph 6.9.4 of the Scoping Report refers to switching to river and rail potentially being mitigation for emissions from road, it will be necessary to have a full understanding of the potential vessel numbers and type of vessel along with the location of any river facilities in order to fully assess this matter in the ES.

Marine Archaeology

It is noted that there may be a need to undertake a marine based examination of data and the Applicant is requested to keep the PLA up to date with this matter as consent may be required from the PLA for whatever is proposed. Full information should be provided of any permanent in river structures required during the construction period (see paragraph 7.7.10 of the Scoping Report) and incorporated into the relevant chapters of the ES. It is of note that other chapters of the Scoping Report refer to temporary, not permanent structures.

Biodiversity

The terrestrial ecology section of the Biodiversity chapter references the Thames Estuary and Marshes RAMSAR, Holehaven Creek pSPA (this is also a SSSI), South Thames Estuary and Marshes SSSI (also a RAMSAR & SPA) and Mucking Flats and Marshes SSSI (also a RAMSAR and SPA). However the impact referred to in the marine section relates to the overwintering birds. It is confusing whether the two have been separated and in particular if the marine ecology, beyond the overwintering birds, of these sites is to be assessed for impact.

The PLA would recommend discussions regarding marine ecology surveys are also undertaken with the Environment Agency and CEFAS in relation to fisheries resources of the marginal habitats most likely to be impacted by marine infrastructure during construction.

The sampling should take into account not only the footprint of the jetty but also the area taken up by a berthing vessel and any access channel needed to use the structure. Sampling locations must be identified in consultation with the PLA and MMO for them to be relevant for any necessary dredging assessment and WFD evaluation.

Since eels as mobile species are no longer part of Tranche 2 MCZ designation, they are not part of the rMCZ on the Thames. It is recommended that detailed discussions are held with Natural England regarding the specific areas the MCZ will apply to, as the LTC application boundary would appear to be outside the current MCZ proposed boundaries.

The approach to establishing the survey area for marine ecology should be clearly explained and justified and in particular the eastern boundary on the south shore, given the proximity of the protected sites on this side of the river. The boundary does not reflect some of the landscape areas including at Mucking Marshes, that have been identified as important in chapter 8 of the Scoping Report and this interrelationship has been identified in general in paragraph 9.4.16.

Noise

The PLA supports noise from marine traffic being considered for the human receptors. However there has been an assumption that barges are being used, where most other chapters have not necessarily assumed any specific shipping type. As highlighted above it may also be possible to utilise vessels larger than barges. All worst case scenarios should be considered for the marine source of noise.

Road Drainage and Water environment

A WFD assessment has been identified in this Chapter. This could mean there is potentially a strong link with the contents of the Biodiversity chapter although this does not seem to have been noted in the report. This inter-relationship will need to be addressed in the ES.

Climate

The use of waterborne freight can significantly reduce the project's carbon emissions. Lessons learnt from major construction projects such as Crossrail, Northern Line Extension and Thames Tideway Tunnel should be considered when developing ways to reduce the projects construction impact on climate.

People and Communities

The scoping report identifies at paragraph 1.2.8 that the new crossing will open opportunities for investment and regeneration, supporting local businesses, national companies and international trade through the Channel and Thames Estuary ports. It is assumed that this point will be expanded upon as part of the socio-economic factors within the People and Communities section of the ES.

The People and Communities section of the Scoping Report identifies that this topic will consider the impact and effect of the construction and operation of the project on amongst other things private property; development land and the local and wider economy. It will also consider the impact on navigation in the event of marine infrastructure being required. It may however be necessary to consider the impact on navigation even if marine infrastructure is not required e.g. as a result of the use of existing infrastructure or in the event that the draft DCO seeks to extinguish the public right to navigate temporarily and / or permanently.

The baseline information obtained / surveys undertaken make reference to the Thames Estuary being a major shipping route as well as being popular for recreational boating. Further information is then provided on the River Thames at paragraph 13.4.15 and whilst accurate for the River Thames generally, it does not appear to be reflective of the activities that take place in the vicinity of the proposed route of the LTC. For example, the Great River Race and Barge Race both take place above Greenwich and, at the moment, whilst there is the Gravesend to Tilbury Ferry there is no fast ferry service into London.

The marine infrastructure that is listed at 13.4.17 is not complete and Gravesend Reach needs to be defined. For example, on the PLA charts there is Gravesend Reach Lower, Middle and Upper. Again the list of marine assets on the North Bank of the river is incomplete and does not include for example, East Tilbury Jetty.

It is recommended that the other baseline information to be obtained includes information from London Gateway given the comments at paragraph 1.2.8 of the Scoping Report about Thames Estuary ports.

Whilst paragraph 13.9.5 refers to any marine infrastructure affected by the work, being reinstated to its pre-project condition, opportunities for legacy should be explored and taken wherever possible.

Conclusion

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The PLA welcomes the pre-application discussions that have been held with the LTC Team to date and would be happy to discuss the content of this representation to ensure that the matters that have been raised are addressed in the ES.

Regards

Lucy

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PORT OF
TILBURY
LONDON

PORT OF TILBURY LONDON LTD

LESLIE FORD HOUSE
TILBURY, ESSEX RM18 7EH
SWITCHBOARD: +44 (0)1375 852200
FACSIMILE: +44 (0)1375 855106

Gail Boyle
Senior EIA and Land Rights Advisor
The Planning Inspectorate
3D Eagle Wing
Temply Quay House
2 The Square
Bristol BS1 6PN

Your ref : TR010032-000007

1st December 2017

Dear Ms Boyle

Lower Thames Crossing Scoping Report

Thank you for consulting Port of Tilbury London Limited (PoTLL) in respect of the above proposal.

PoTLL have been in liaison with the Lower Thames Crossing ("LTC") project team as the project has progressed. The comments in this letter are made from the perspective of PoTLL's role as :-

1. The operator of Port of Tilbury
2. The owner of land within the draft Order Limits that would be required for the proposed link to Tilbury immediately north of the Thames.
3. The promoter of a new Port Terminal on the western part of the former Tilbury Power Station site (known as Tilbury2) which is an application which has been submitted to the Secretary of State (reference TR030003) and which was accepted for examination on 21 November 2017.

In respect of the Tilbury2 DCO application, PoTLL is in discussions with PINS on this, but it is hoped that the Preliminary Meeting will be held in early to mid-February and, assuming the Secretary of State confirms the Order, consent for the scheme will be in place prior to the submission of the LTC DCO application.

In this context, we offer the following comments.

1. PoTLL's overall position on LTC

PoTLL supports the urgent need for an additional crossing of the river Thames between Essex and Kent and supports in principle the alignment of the crossing shown in the Scoping Report. This support is on the basis that the scheme now provides for a much needed link to Tilbury.

PoTLL consider that given the proximity of the proposed north bank tunnel entrance and road to the port estate and the existing and planned port extension at Tilbury2, the scheme will provide for substantial road capacity improvements, both locally and nationally. It will deliver a step-change in the connectivity, resilience and economic



Registered Office:
Leslie Ford House
Tilbury, Essex RM18 7EH

Registered in England (No. 2659118)

potential of the Tilbury area. It will therefore have economic, transport and environmental benefits to the locality. It will :-

- support economic growth and development at the Port in the medium to long term which will in turn support local, national and international trade;
- provide additional time savings to movements to-and-from the Port to trading hubs in the Midlands, northern Europe and the South East, improving the return on the investment;
- provide further congestion relief to the Dartford crossings and improve the performance of the A1089 and A13 approach roads;
- improve the resilience of the strategic road network, particularly the A13 and A1089 (currently the only major route to the Port), with associated relief for the local road network, including residential areas;
- improve safety through reduced traffic flow on A1089 through Tilbury ;
- improve connections between Kent and Essex providing better access to jobs, particularly in north Kent.

However, PoTLL consider that even if/when the LTC opens to traffic, the A1089 will remain a crucial link for the Port given the proximity of the Port entrance and the direction of flows to and from the Port. Maintaining the trunk road status and operating capacity of the A1089 as a dual carriageway north of the Port, alongside the LTC, and the proposed link to Tilbury will maximise the resilience of the highway network. The A1089 is also important for the efficient operation of London Distribution Park, a development jointly promoted by PoTLL with Roxhill Developments Limited and now accommodating a Fulfilment Centre for Amazon and a Travis Perkins Distribution Centre as well as areas of port-related haulier parking. This development is accessed from the eastern arm of a roundabout on the A1089 a short distance north of the Port. This roundabout (known colloquially as the 'Asda roundabout') is also crucial for the efficient access and operation of a range of other businesses (and the Asda supermarket itself) which are accessed from its western arm, in the Thurrock Parkway industrial area.

PoTLL therefore consider that the description of the scheme should make clear the implications for the classification of the road network when the LTC is brought into operation, particularly in relation to the A1089, with confirmation that this will remain a trunk road and dual carriageway with no diminution in operating capacity.

2. Interaction with Tilbury2 NSIP

At its western end, the proposed link to Tilbury will cross land owned by PoTLL that is the subject of proposals known as "Tilbury2." This NSIP application proposes to create a new Port Terminal on the north bank of the Thames a short distance east of the existing Port of Tilbury, and includes an 'infrastructure corridor' comprising a new single carriageway road between Ferry Road and Fort Road, linking the Tilbury2 site back to the mainline rail network. This infrastructure corridor is on a broadly similar alignment as the western end of the proposed LTC/Tilbury link road. PoTLL propose to work closely with the promotor of LTC to ensure that the details of the Tilbury link from the LTC are consistent with PoTLL's own proposals for its infrastructure corridor in the Tilbury2 DCO application in order to avoid abortive works and cost and to minimise the environmental effects of the LTC link.

3. Cumulative Assessment/Future Baseline

If approved, Tilbury2 will be constructed over a 24 month period commencing in early 2018, and will become first operational in early 2020.

As set out in the LTC Scoping Report, the LTC project is assessed as taking 5 years to complete, including a 9 month mobilisation period. An estimated opening date of 2026 is assumed, meaning that mobilisation of construction would commence in 2021. This is the 'best case' and would slip by one year if private funding is required (SR, para. 2.1.4). As such, the construction would not commence until after the currently estimated first operation of Tilbury2 following completion of all infrastructure early in 2020.

The Tilbury2 proposals will therefore need to operate in the absence of the LTC and this is the basis for the assessment of highways impacts and inter-related environmental effects in the environmental statement submitted with the Tilbury2 DCO application. This approach is necessary as not only is the delivery of LTC uncertain at this early stage, but even if an Order is made to allow for its construction, the LTC and associated link to Tilbury will not open prior to the first operation of Tilbury2.

PoTLL is therefore appreciative of the indication in the LTC Scoping Report that the LTC environmental assessment will include Tilbury2 in the assessment of cumulative effects of LTC with other projects. However, whilst PoTLL considers that, given the temporal separation set out above, it would be more appropriate for the LTC environmental statement to include Tilbury2 in a defined 'future baseline' (i.e. the situation pertaining prior to the first operation of LTC), rather than as a 'cumulative' project.

At the time of submission of the Tilbury2 application, PoTLL explained within the Tilbury2 environmental statement that it had concluded that it was not possible to properly define an LTC 'scheme' in order to assess the cumulative impacts of Tilbury2 with the LTC proposals. Given this context the submitted Environmental Statement does not assess the cumulative impact of Tilbury2 with the LTC. The LTC Scoping Report having now been published, PINS have requested that PoTLL carry out a Cumulative Assessment of Tilbury2 with LTC.

PoTLL remain of the view that given the temporal separation of the proposals it must rightly be for the assessment of the environmental effects of the LTC to assess the effects of the LTC scheme together with Tilbury2. Moreover, at this stage, whilst the LTC Scoping Report provides more information as to the proposed route and sets out the methodology for assessment it provides little information as to operational parameters such as forecast levels of traffic or the design of the scheme.

Based on PINS request, however, PoTLL are considering this matter further.

In considering the future baseline with Tilbury2 operational, PoTLL would emphasise that the LTC assessment should take account of the full extent of mitigation across all environmental topics that forms part of the Tilbury2 proposals, as particularly set out

in the Tilbury 2 ES and DCO; and any impact the LTC might have on that proposed mitigation.

4. Minimising adverse economic consequences during construction and operation.

PoTLL would emphasise the need for the LTC scheme to consider mitigation during both construction and operation in relation to minimising any adverse consequences on the operation of the Port. During construction, the proposals will need to consider detailed phasing in relation to the access to the Tilbury2 site in order to maintain access and operation of the port terminal which, as set out above, will be operational by that time. Failure to adequately address this issue would have adverse economic consequences.

In order to minimise adverse economic consequences during operation, the proposals will need to demonstrate, through the consideration of alternatives, that the loss of land to Port operations has been minimised (see further below).

5. Overall Scope of proposed Environmental Assessment

PoTLL support the scope of environmental topics set out in the document. PoTLL would request that consideration is, however, given to any impacts on navigation of vessels on the Thames in the vicinity of the crossing during construction.

6. Land requirements

PoTLL would highlight the need for full and early engagement in respect of the permanent and temporary acquisition of PoTLL land in order that discussions in this regard can be well advanced prior to the application.

As highlighted above, it is expected that the Tilbury2 DCO will come into force prior to the LTC draft Order being submitted. As set out in the draft DCO submitted with the Tilbury2 application, it is anticipated that the land within the Order limits of the Tilbury2 site will become operational land and that PoTLL will become a statutory undertaker in the terms of S.127 of the Planning Act 2008 upon the making of the DCO.

As per S.127, if the promoter of the LTC were to seek to acquire that operational land outright, or acquire rights over it, the promoter will need to be able to show that such acquisition can take place without causing serious detriment to the carrying on of PoTLL's undertaking, unless alternative land were provided.


Moreover, the Environmental Assessment of alternatives is also relevant in this regard in order to fully demonstrate the need for the land requirements.

It also appears as though the DCO boundary for LTC at the extreme western end of the link to Tilbury includes land within the existing Port operational area where the Port's status as a statutory undertaker would also apply. PoTLL intends to discuss the detailed boundaries in this regard with the objective of avoiding or minimising the extent of this land.

7. Use of the Port during construction of LTC

Finally, PoTLL would emphasise that the Port itself can play a significant part in mitigating the environmental effects of the construction of LTC by its role in the logistics and construction materials supply chain, thereby assisting with maximisation of the use of the river for such materials and minimising construction traffic impacts. This is a role that has been played by the Port on other major construction projects such as the Olympic Park.

Yours sincerely



Peter Ward
Commercial Director
Port of Tilbury



Public Health
England

CRCE/NSIP Consultations
Chilton
Didcot
Oxfordshire OX11 0RQ

T +44 (0) 1235 825278
F +44 (0) 1235 822614
www.gov.uk/phe

Ms Gail Boyle
Senior EIA and Land Rights Advisor
The Planning Inspectorate
3D Eagle Wing
2 The Square
Bristol BS1 6PN

29th November 2017

Dear Ms Boyle

**Re: Scoping Consultation
Application for an Order Granting Development Consent for the proposed
Lower Thames Crossing**

Thank you for including Public Health England (PHE) in the scoping consultation phase of the above application. Our response focuses on health protection issues relating to chemicals and radiation. Advice offered by PHE is impartial and independent.

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

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

The attached appendix outlines generic areas that should be addressed by all promoters when preparing ES for inclusion with an NSIP submission. We are happy to assist and discuss proposals further in the light of this advice.

Yours sincerely,

Environmental Public Health Scientist

nsipconsultations@phe.gov.uk

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

Appendix: PHE recommendations regarding the scoping document

General approach

The EIA should give consideration to best practice guidance such as the Government's Good Practice Guide for EIA¹. It is important that the EIA identifies and assesses the potential public health impacts of the activities at, and emissions from, the installation. Assessment should consider the development, operational, and decommissioning phases.

It is not PHE's role to undertake these assessments on behalf of promoters as this would conflict with PHE's role as an impartial and independent body.

Consideration of alternatives (including alternative sites, choice of process, and the phasing of construction) is widely regarded as good practice. Ideally, EIA should start at the stage of site and process selection, so that the environmental merits of practicable alternatives can be properly considered. Where this is undertaken, the main alternatives considered should be outlined in the ES².

The following text covers a range of issues that PHE would expect to be addressed by the promoter. However this list is not exhaustive and the onus is on the promoter to ensure that the relevant public health issues are identified and addressed. PHE's advice and recommendations carry no statutory weight and constitute non-binding guidance.

Receptors

The ES should clearly identify the development's location and the location and distance from the development of off-site human receptors that may be affected by emissions from, or activities at, the development. Off-site human receptors may include people living in residential premises; people working in commercial, and industrial premises and people using transport infrastructure (such as roads and railways), recreational areas, and publicly-accessible land. Consideration should also be given to environmental receptors such as the surrounding land, watercourses, surface and groundwater, and drinking water supplies such as wells, boreholes and water abstraction points.

Impacts arising from construction and decommissioning

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

¹ Environmental Impact Assessment: A guide to good practice and procedures - A consultation paper; 2006; Department for Communities and Local Government. Available from: <http://webarchive.nationalarchives.gov.uk/20100410180038/http://communities.gov.uk/planningandbuilding/planning/sustainability/environmental/environmentalimpactassessment/>

² DCLG guidance, 1999 <http://www.communities.gov.uk/documents/planningandbuilding/pdf/155958.pdf>

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

Emissions to air and water

Significant impacts are unlikely to arise from installations which employ Best Available Techniques (BAT) and which meet regulatory requirements concerning emission limits and design parameters. However, PHE has a number of comments regarding emissions in order that the EIA provides a comprehensive assessment of potential impacts.

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

- should include appropriate screening assessments and detailed dispersion modelling where this is screened as necessary
- should encompass all pollutants which may be emitted by the installation in combination with all pollutants arising from associated development and transport, ideally these should be considered in a single holistic assessment
- should consider the construction, operational, and decommissioning phases
- should consider the typical operational emissions and emissions from start-up, shut-down, abnormal operation and accidents when assessing potential impacts and include an assessment of worst-case impacts
- should fully account for fugitive emissions
- should include appropriate estimates of background levels
- should identify cumulative and incremental impacts (i.e. assess cumulative impacts from multiple sources), including those arising from associated development, other existing and proposed development in the local area, and new vehicle movements associated with the proposed development; associated transport emissions should include consideration of non-road impacts (i.e. rail, sea, and air)
- should include consideration of local authority, Environment Agency, Defra national network, and any other local site-specific sources of monitoring data
- should compare predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as UK Air Quality Standards and Objectives and Environmental Assessment Levels)
 - If no standard or guideline value exists, the predicted exposure to humans should be estimated and compared to an appropriate health-based value (a Tolerable Daily Intake or equivalent). Further guidance is provided in Annex 1
 - This should consider all applicable routes of exposure e.g. include consideration of aspects such as the deposition of chemicals emitted to air and their uptake via ingestion
- should identify and consider impacts on residential areas and sensitive receptors (such as schools, nursing homes and healthcare facilities) in the area(s) which

may be affected by emissions, this should include consideration of any new receptors arising from future development

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

PHE's view is that the EIA should appraise and describe the measures that will be used to control both point source and fugitive emissions and demonstrate that standards, guideline values or health-based values will not be exceeded due to emissions from the installation, as described above. This should include consideration of any emitted pollutants for which there are no set emission limits. When assessing the potential impact of a proposed installation on environmental quality, predicted environmental concentrations should be compared to the permitted concentrations in the affected media; this should include both standards for short and long-term exposure.

Additional points specific to emissions to air

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

- should include consideration of impacts on existing areas of poor air quality e.g. existing or proposed local authority Air Quality Management Areas (AQMAs)
- should include modelling using appropriate meteorological data (i.e. come from the nearest suitable meteorological station and include a range of years and worst case conditions)
- should include modelling taking into account local topography

Additional points specific to emissions to water

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

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

Land quality

We would expect the promoter to provide details of any hazardous contamination present on site (including ground gas) as part of the site condition report.

Emissions to and from the ground should be considered in terms of the previous history of the site and the potential of the site, once operational, to give rise to issues. Public health impacts associated with ground contamination and/or the

migration of material off-site should be assessed³ and the potential impact on nearby receptors and control and mitigation measures should be outlined.

Relevant areas outlined in the Government's Good Practice Guide for EIA include:

- effects associated with ground contamination that may already exist
- effects associated with the potential for polluting substances that are used (during construction / operation) to cause new ground contamination issues on a site, for example introducing / changing the source of contamination
- impacts associated with re-use of soils and waste soils, for example, re-use of site-sourced materials on-site or offsite, disposal of site-sourced materials offsite, importation of materials to the site, etc.

Waste

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

For wastes arising from the installation the EIA should consider:

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

Other aspects

Within the EIA PHE would expect to see information about how the promoter would respond to accidents with potential off-site emissions e.g. flooding or fires, spills, leaks or releases off-site. Assessment of accidents should: identify all potential hazards in relation to construction, operation and decommissioning; include an assessment of the risks posed; and identify risk management measures and contingency actions that will be employed in the event of an accident in order to mitigate off-site effects.

The EIA should include consideration of the COMAH Regulations (Control of Major Accident Hazards) and the Major Accident Off-Site Emergency Plan (Management of Waste from Extractive Industries) (England and Wales) Regulations 2009: both in terms of their applicability to the installation itself, and the installation's potential to impact on, or be impacted by, any nearby installations themselves subject to the these Regulations.

There is evidence that, in some cases, perception of risk may have a greater impact on health than the hazard itself. A 2009 report⁴, jointly published by Liverpool John Moores University and the HPA, examined health risk perception and environmental problems using a number of case studies. As a point to consider, the report suggested: "Estimation of community anxiety and stress should be included as part of every risk or impact assessment of proposed plans that involve a potential environmental hazard. This is true even when the physical health risks may be

³ Following the approach outlined in the section above dealing with emissions to air and water i.e. comparing predicted environmental concentrations to the applicable standard or guideline value for the affected medium (such as Soil Guideline Values)

⁴ Available from: <http://www.cph.org.uk/wp-content/uploads/2012/08/health-risk-perception-and-environmental-problems--summary-report.pdf>

negligible.” PHE supports the inclusion of this information within EIAs as good practice.

Electromagnetic fields (EMF)

This statement is intended to support planning proposals involving electrical installations such as substations and connecting underground cables or overhead lines. PHE advice on the health effects of power frequency electric and magnetic fields is available in the following link:

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

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

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

Policy Measures for the Electricity Industry

The Department of Energy and Climate Change has published a voluntary code of practice which sets out key principles for complying with the ICNIRP guidelines:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/37447/1256-code-practice-emf-public-exp-guidelines.pdf

Companion codes of practice dealing with optimum phasing of high voltage power lines and aspects of the guidelines that relate to indirect effects are also available:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48309/1255-code-practice-optimum-phasing-power-lines.pdf

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/224766/powerlines_vcop_microshocks.pdf

Exposure Guidelines

PHE recommends the adoption in the UK of the EMF exposure guidelines published by the International Commission on Non-ionizing Radiation Protection (ICNIRP). Formal advice to this effect was published by one of PHE’s predecessor organisations (NRPB) in 2004 based on an accompanying comprehensive review of the scientific evidence:-

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

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

http://webarchive.nationalarchives.gov.uk/+www.dh.gov.uk/en/PublicHealth/HealthProtection/DH_4089500

Static magnetic fields

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

Power frequency electric and magnetic fields

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

Long term effects

There is concern about the possible effects of long-term exposure to electromagnetic fields, including possible carcinogenic effects at levels much lower than those given in the ICNIRP guidelines. In the NRPB advice issued in 2004, it was concluded that the studies that suggest health effects, including those concerning childhood leukaemia, could not be used to derive quantitative guidance on restricting exposure. However, the results of these studies represented uncertainty in the underlying evidence base, and taken together with people's concerns, provided a basis for providing an additional recommendation for Government to consider the need for

further precautionary measures, particularly with respect to the exposure of children to power frequency magnetic fields.

The Stakeholder Advisory Group on ELF EMFs (SAGE)

SAGE was set up to explore the implications for a precautionary approach to extremely low frequency electric and magnetic fields (ELF EMFs), and to make practical recommendations to Government:

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

SAGE issued its First Interim Assessment in 2007, making several recommendations concerning high voltage power lines. Government supported the implantation of low cost options such as optimal phasing to reduce exposure; however it did not support not support the option of creating corridors around power lines on health grounds, which was considered to be a disproportionate measure given the evidence base on the potential long term health risks arising from exposure. The Government response to SAGE's First Interim Assessment is available here:

http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107124

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

Ionising radiation

Particular considerations apply when an application involves the possibility of exposure to ionising radiation. In such cases it is important that the basic principles of radiation protection recommended by the International Commission on Radiological Protection⁵ (ICRP) are followed. PHE provides advice on the application of these recommendations in the UK. The ICRP recommendations are implemented in the Euratom Basic Safety Standards⁶ (BSS) and these form the basis for UK legislation, including the Ionising Radiation Regulations 1999, the Radioactive Substances Act 1993, and the Environmental Permitting Regulations 2016.

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

⁵ These recommendations are given in publications of the ICRP notably publications 90 and 103 see the website at <http://www.icrp.org/>

⁶ Council Directive 96/29/EURATOM laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation.

When considering the radiological impact of routine discharges of radionuclides to the environment PHE would expect to see a full radiation dose assessment considering both individual and collective (population) doses for the public and, where necessary, workers. For individual doses, consideration should be given to those members of the public who are likely to receive the highest exposures (referred to as the representative person, which is equivalent to the previous term, critical group). Different age groups should be considered as appropriate and should normally include adults, 1 year old and 10 year old children. In particular situations doses to the fetus should also be calculated⁷. The estimated doses to the representative person should be compared to the appropriate radiation dose criteria (dose constraints and dose limits), taking account of other releases of radionuclides from nearby locations as appropriate. Collective doses should also be considered for the UK, European and world populations where appropriate. The methods for assessing individual and collective radiation doses should follow the guidance given in 'Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment August 2012'⁸. It is important that the methods used in any radiological dose assessment are clear and that key parameter values and assumptions are given (for example, the location of the representative persons, habit data and models used in the assessment).

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

The radiological impact of any solid waste storage and disposal should also be addressed in the assessment to ensure that this complies with UK practice and legislation; information should be provided on the category of waste involved (e.g. very low level waste, VLLW). It is also important that the radiological impact associated with the decommissioning of the site is addressed. Of relevance here is PHE advice on radiological criteria and assessments for land-based solid waste disposal facilities⁹. PHE advises that assessments of radiological impact during the operational phase should be performed in the same way as for any site authorised to discharge radioactive waste. PHE also advises that assessments of radiological impact during the post operational phase of the facility should consider long timescales (possibly in excess of 10,000 years) that are appropriate to the long-lived nature of the radionuclides in the waste, some of which may have half-lives of millions of years. The radiological assessment should consider exposure of members of hypothetical representative groups for a number of scenarios including the expected migration of radionuclides from the facility, and inadvertent intrusion into the facility once institutional control has ceased. For scenarios where the

⁷ HPA (2008) Guidance on the application of dose coefficients for the embryo, fetus and breastfed infant in dose assessments for members of the public. Doc HPA, RCE-5, 1-78, available at <https://www.gov.uk/government/publications/embryo-fetus-and-breastfed-infant-application-of-dose-coefficients>

⁸ The Environment Agency (EA), Scottish Environment Protection Agency (SEPA), Northern Ireland Environment Agency, Health Protection Agency and the Food Standards Agency (FSA). Principles for the Assessment of Prospective Public Doses arising from Authorised Discharges of Radioactive Waste to the Environment August 2012. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/296390/qeho1202bklh-e-e.pdf

⁹ HPA RCE-8, Radiological Protection Objectives for the Land-based Disposal of Solid Radioactive Wastes, February 2009

probability of occurrence can be estimated, both doses and health risks should be presented, where the health risk is the product of the probability that the scenario occurs, the dose if the scenario occurs and the health risk corresponding to unit dose. For inadvertent intrusion, the dose if the intrusion occurs should be presented. It is recommended that the post-closure phase be considered as a series of timescales, with the approach changing from more quantitative to more qualitative as times further in the future are considered. The level of detail and sophistication in the modelling should also reflect the level of hazard presented by the waste. The uncertainty due to the long timescales means that the concept of collective dose has very limited use, although estimates of collective dose from the 'expected' migration scenario can be used to compare the relatively early impacts from some disposal options if required.

Annex 1

Human health risk assessment (chemical pollutants)

The points below are cross-cutting and should be considered when undertaking a human health risk assessment:

- The promoter should consider including Chemical Abstract Service (CAS) numbers alongside chemical names, where referenced in the ES
- Where available, the most recent United Kingdom standards for the appropriate media (e.g. air, water, and/or soil) and health-based guideline values should be used when quantifying the risk to human health from chemical pollutants. Where UK standards or guideline values are not available, those recommended by the European Union or World Health Organisation can be used
- When assessing the human health risk of a chemical emitted from a facility or operation, the background exposure to the chemical from other sources should be taken into account
- When quantitatively assessing the health risk of genotoxic and carcinogenic chemical pollutants PHE does not favour the use of mathematical models to extrapolate from high dose levels used in animal carcinogenicity studies to well below the observed region of a dose-response relationship. When only animal data are available, we recommend that the 'Margin of Exposure' (MOE) approach¹⁰ is used

¹⁰ Benford D et al. 2010. Application of the margin of exposure approach to substances in food that are genotoxic and carcinogenic. Food Chem Toxicol 48 Suppl 1: S2-24



Lower Thames Crossing

Royal Mail Group Limited comments on information to be provided in applicant's Environmental Statement

Introduction

Reference the letter from PINS to Royal Mail dated 3 November 2017 requesting Royal Mail's comments on the information that should be provided in Highways England's Environmental Statement.

Royal Mail's consultants BNP Paribas Real Estate have reviewed the applicant's Scoping Report as submitted to PINS on 2 November 2017.

Royal Mail- relevant information

Royal Mail is responsible for providing efficient mail sorting and delivery nationally. As the Universal Service Provider under the Postal Services Act 2011, Royal Mail has a statutory duty to deliver mail to every residential and business address in the country as well as collecting mail from all Post Offices and post boxes six days a week.

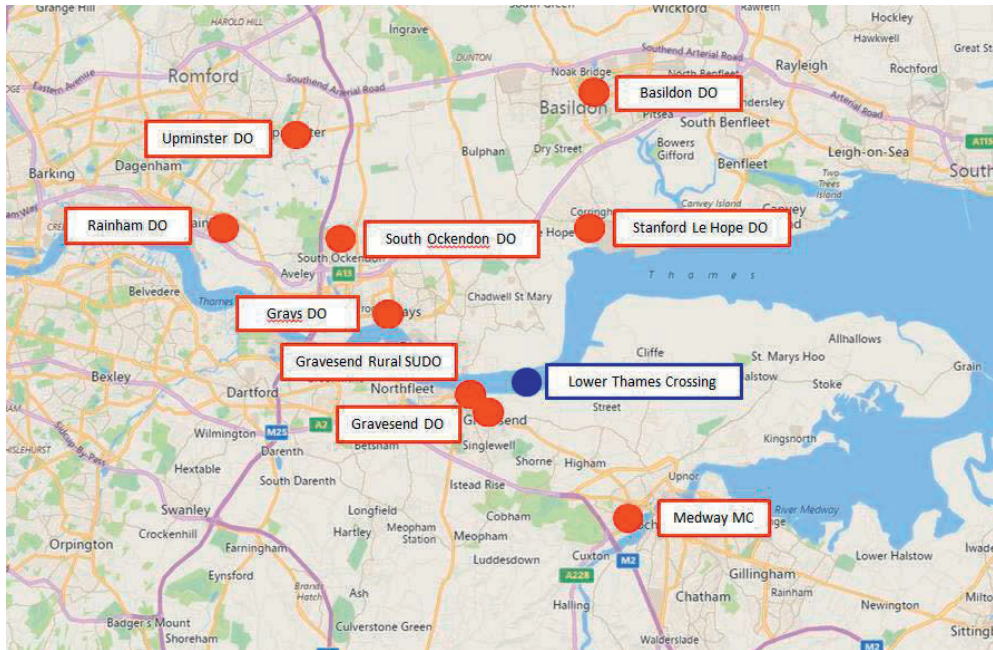
Royal Mail's postal sorting and delivery operations rely heavily on road communications. Royal Mail's ability to provide efficient mail collection, sorting and delivery to the public is sensitive to changes in the capacity of the highway network.

Royal Mail is a major road user nationally. Disruption to the highway network and traffic delays can have direct consequences on Royal Mail's operations, its ability to meet the Universal Service Obligation and comply with the regulatory regime for postal services thereby presenting a significant risk to Royal Mail's business.

Royal Mail therefore wishes to ensure the protection of its future ability to provide an efficient mail sorting and delivery service to the public in accordance with its statutory obligations which may potentially be adversely affected by the construction and operation of this proposed road scheme.

Royal Mail's has nine operational Delivery Offices both within 30 miles of the proposed Thames crossing and associated route as listed and shown on plan below:

Gravesend Rural Sub Unit Delivery Office	2 Queen Street, Gravesend DA12 2EE	2.0 miles
Gravesend Delivery Office	144-145 Milton Road, Gravesend DA12 2AA	2.2 miles
Medway Mail Centre	1 Knight Road, Rochester ME2 2EE	8.6 miles
South Ockendon Delivery Office	Derry Avenue, South Ockendon RM15 5DU	17.7 miles
Grays Delivery Office	Hogg Lane, Grays RM17 5QB	18.7 miles
Rainham Delivery Office	32 Wennington Road, Rainham RM13 9TD	20.2 miles
Upminster Delivery Office	58 Corbets Tey Road, Upminster RM14 2AS	23.4 miles
Stanford Le Hope Delivery Office	St Johns Way, Stanford Le Hope SS17 7LH	24.2 miles
Basildon Delivery Office	25 East Square, Basildon SS14 1AA	29.6 miles



The M2/A2 and the M25 are all very important strategic distribution routes for Royal Mail operational traffic. Also, in exercising its statutory duties Royal Mail vehicles use on a daily basis all of the local roads that may potentially be affected by additional traffic arising from the construction of the proposed Lower Thames Crossing.

It is envisaged that the proposed Lower Thames Crossing will, once constructed, improve Royal Mail operational traffic movements. However, Royal Mail is concerned about the potential for disruption to its operations during the construction phase.

Royal Mail's comments on information that should be provided in Highways England's Environmental Statement

In view of the above, Royal Mail has the following comments / requests:

1. The ES should include information on the needs of major road users (such as Royal Mail) and acknowledge the requirement to ensure that major road users are not disrupted through full advance consultation by the applicant at the appropriate time in the DCO and development process.
2. The ES and DCO application should include detailed information on the construction traffic mitigation measures that are proposed to be implemented by Highways England / its contractor, including a draft Construction Traffic Management Plan (CTMP).
3. Royal Mail is fully pre-consulted by Highways England / its contractor on any proposed road closures / diversions/ alternative access arrangements, hours of working and the content of the CTMP. The ES should acknowledge the need for this consultation with Royal Mail and other relevant major road users.

Royal Mail is able to supply Highways England with information on its road usage / trips if required.



Should PINS or Highways England have any queries in relation to the above then in the first instance please contact Holly Trotman (holly.trotman@royalmail.com) of Royal Mail's Legal Services Team or Daniel Parry-Jones (daniel.parry-jones@bnpparibas.com) of BNP Paribas Real Estate.

3D Eagle Wing
Temple Quay House
2 The Square
Bristol
BS1 6PN

By email to:
LowerThamesCrossing@pins.gsi.gov.uk

Tel No: 01732 227000, Option 3
Ask for: Matthew Durling
Email: Matthew.Durling@sevenoaks.gov.uk
My Ref: PA/17/00830
Your TR010032-000007
Ref:
Date: 30.11.2017

Dear Sir or Madam

Site: Lower Thames Crossing

Development: Scoping Opinion on the Environmental Statement (ES) relating to the Lower Thames Crossing.

I write with reference to your request dated 03 November 2017 for our opinion on the Scoping Request submitted to the Planning Inspectorate in respect of development at the above site. Specifically you have requested we inform you of the information we consider should be provided in the ES. We wish to comment on the following issues:

Air quality

It is noted that the project is located close to a number of Air Quality Management Areas (AQMAs) and that these could be affected by the future operation of the project. The project is likely to have significant impacts on the air quality within adjoining authorities and may also result in changes to traffic flows that would have an impact on designated AQMAs within Sevenoaks District. The ES should therefore include a Transport Assessment (TA) sufficient to demonstrate the impacts of the development on local highways, including within Sevenoaks District and provide a consideration of the impacts of that traffic on air quality. It is recommended that the scope of the TA be agreed with the local Highways Authority (Kent County Council).

Other

Part of the site is located within the Kent Downs Area of Outstanding Natural Beauty (AONB) and particular consideration should be given in the ES to the direct and indirect effects upon this designated landscape and in particular the effect

upon its purpose for designation. The ES must refer to the relevant management plan for the Kent Downs AONB. Please see detailed comments from the Kent Downs AONB Unit attached.

The project also has the potential to impact on biodiversity. Please see detailed comments from the County Ecologist attached.

Given the distance of the development from Sevenoaks District it is considered unlikely that it would have any impacts on this District's cultural heritage or geology and soils. The development would also be unlikely to have any local impacts in terms of materials, noise and vibration, people and communities or drainage. Notwithstanding this we note that the project is likely to have significant impacts on these issues within adjoining authorities and we would therefore request that they are fully addressed within the ES as appropriate.

These comments are based on the information contained within the Scoping Report dated October 2017. Should the proposal be amended or alternative options be pursued, additional information and assessment may be necessary. We reserve the right to request further information at any time.

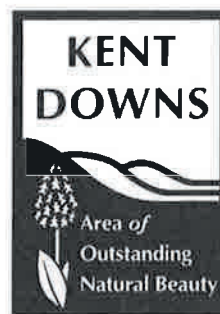
Yours faithfully



Matthew Durling
Principal Planning Officer
Development Control (North)
Sevenoaks District Council

Matthew Durling
Planning Officer
Council Offices
Argyle Road
Sevenoaks
Kent
TN13 1HG

Sent by email to:
Planning.comments@sevenoaks.gov.uk



Kent Downs AONB Unit
West Barn
Penstock Hall Farm
Canterbury Road
East Brabourne
Ashford, Kent TN25 5LL
Tel: 01303 815170
Fax: 01303 815179
mail@kentdowns.org.uk
www.kentdowns.org.uk

14 November 2017

Dear Matthew

Application: SE/PA/17/00830

Lower Thames Crossing EIA Scoping Report

Thank you for the opportunity to comment on the Lower Thames Crossing EIA Scoping Report. The following comments are from the Kent Downs AONB Unit and as such are at an officer level and do not necessarily represent the comments of the whole AONB partnership. The legal context of our response and list of AONB guidance is set out as Appendix 1 below.

The AONB Unit generally agrees with the proposed methodology for assessing impacts on the landscape and the identified receptors set out in the Report. Highways England and their consultants have positively engaged with the AONB Unit to date and we would wish to see such engagement continue, including agreement of the proposed view points for the LVIA.

At para 8.2.1 reference is made to local development plans and policies. We consider it important for the Kent Downs AONB Management Plan to be included within these documents as this can be a material consideration in determining planning applications, as acknowledged in the Planning Practice Guidance at paragraph 004 Reference ID 8-00420140306

At para. 8.4.3 reference is made to the setting of the AONB, however this appears to be limited to land north of the A2. Land outside of the AONB boundary south of the A2 is also considered to comprise the setting of the AONB.

It is advised, at paras 8.7.3 and 8.7.10 that in line with relevant guidance documents, an operational assessment on the landscape will be provided at Year of Opening (Winter) and Design Year 15 (Summer). We consider however that it would be beneficial to also include an assessment at Design Year 15 on winter as well as summer views so that the full impacts of the proposal in the winter months can be assessed.

In addition to the indirect impacts identified at para 8.7.5, it is considered that the impacts of the proposed road closures in terms of displacement of traffic on local rural roads should be assessed. The proposed alterations to the existing road network include the removal of the existing A2 east bound lane near Nell's Café at Hever Court Road. Instead east bound traffic would need to access a new link road provided to the Brewer's Road roundabout where east bound traffic would then be required to travel on Brewers Road, over the A2 and to the Junction onto the A2

Anglesey
Arnside and Silverdale
Blackdown Hills
Cannock Chase
Chichester Harbour
Chilterns
Clwydian Range
Cornwall
Cotswolds
Gower
Cranbourne Chase and
West Wiltshire Downs
Dedham Vale
Dorset
East Devon
Forest of Bowland
Howardian Hills
High Weald
Isle of Wight
Isles of Scilly
Kent Downs
Lincolnshire Wolds
Llyn
Malvern Hills
Mendip Hills
Nidderdale
Norfolk Coast
North Devon
North Pennines
North Wessex Downs
Northumberland Coast
Quantock Hills
Shropshire Hills
Solway Coast
South Devon
Suffolk Coast and Heaths
Surrey Hills
Tamar Valley
Wye Valley



close to Shorne Woods Country Park. This would lead to an increase in local traffic into the AONB that should be assessed.

The proposed works have been developed from the scheme that was the subject of consultation last year and now includes the widening of the A2 for a length of some 2.5km from the new junction serving the link road and Junction 1 of the M2 which is all land within the AONB. This is likely to result in the loss of significant amounts of mature vegetation which currently helps mitigate the impact of the A2 as well as HS1 infrastructure on the landscape. As such reference to the potential for adverse effects on the AONB (in addition to its setting) should be included at paragraphs 8.8.1 and 8.8.2.

Given that a significant amount of tree cover in this locality comprises Ash, it will be important that the likely impacts of ash die back disease is fully taken into account in assessing the visual impact of the proposal.

At 8.9.2 a number of potential mitigation measures are proposed. In addition to mitigation, it would be appropriate for compensation to be made available. Compensation would not offset harm to the AONB; damage to the AONB and its setting cannot be substituted by other means. Such an approach would be consistent with the Kent Downs AONB Management Plan Policy SD12. This requires essential transport and infrastructure schemes to, amongst other things, provide environmental compensation by benefits to natural beauty elsewhere in the AONB. The level of compensation should be commensurate with the significant level of harm. Compensation provided by National Grid in respect of the installation of a gas pipe through a 41 km length in the Cotswold AONB exceeded £1m, which represented approximately 1% of the cost of construction. This contributed towards wider mitigation measures in the AONB including dry stone walling grants and funding for community and climate change projects. The impact of this scheme was a temporary one due to the undergrounding of the pipe. Given the permanent harm that would result in the Kent Downs AONB as a result of the proposed highways infrastructure, the Executive would expect a commensurate amount of compensation.

With regards to the Traffic Forecasting as set out at Section 2.19, we consider it inevitable that the provision of a route further east than the existing one, connecting directly to the A2/M2 will result in a significant shift in traffic heading southwards into Kent, including Dover Port and Channel Tunnel traffic. This is likely to result in a significant increase in traffic using the A229 (Bluebell Hill) and choosing the M2/A2 over the M20. It could also potentially impact on the A260.

The A229 Bluebell Hill cuts directly through the North Downs escarpment and with the exception of a small section at the southern end, lies within the Kent Downs AONB. The route is predominantly a dual carriageway although a proportion of the northern bound carriageway comprises three lanes. The road is already often congested and it is considered inevitable that there will be increased traffic using this route. It has previously been advised that the widening of this route is not required as a result of the new LTC, and that traffic modelling demonstrated that route choice between the two Thames crossings would not be directly influenced by an upgrade to the A229. We are concerned however that there will be future pressure for this route to be widened in response to increased traffic flows. Indeed it was suggested in Highways England's consultation last year that further consideration to this link would be considered separately 'as part of Highway's England's ongoing route planning'. Upgrading of this route would have significant impacts on the Kent Downs AONB.

There are also likely to be implications for the M2/A2 which forms the northern boundary of the AONB for much of its length between Rochester and Faversham and passes through a significant length of the AONB south of Canterbury. From Junction 4 of the M2 the carriageway reduces to two lanes and sections further south on the approach to Dover are only single carriageway. As such, increased use of the M2/A2 is likely to result in capacity issues, leading to potential future pressure for works to this route as well as potential increase for services, lorry parks etc. which would all impact on the Kent Downs AONB. A significant

increase in traffic could also impact on tranquillity as this road passes through/adjacent to the AONB.

The Kent Downs AONB Unit considers it imperative that the EIA should also include consideration of the environmental impacts of the downstream impacts of the new crossing.

I hope this is of assistance to you. I would be happy to discuss further if this would be helpful.

Yours sincerely

A solid black rectangular box used to redact the signature of the sender.

Katie Miller
Planning Manager, Kent Downs AONB Unit

APPENDIX 1

Planning consultation with the Kent Downs AONB Unit

Background and context:

The Kent Downs Area of Outstanding Natural Beauty partnership (which includes all the local authorities within the AONB) has agreed to have a limited land use planning role. In summary this is to:

- Provide design guidance in partnership with the Local Authorities represented in the AONB.
- Comment on forward/strategic planning issues-for instance Local Development Frameworks.
- Involvement in development control (planning applications) only in exceptional circumstances. For example in terms of scale and precedence.
- Provide informal planning advice/comments on development control (planning applications) at the request of a Kent Downs AONB Joint Advisory member and /or Local Authority Planning Officer.

National Local planning policies are very clear that highest priority should be given to the conservation and enhancement of Areas of Outstanding Natural Beauty.

The NPPF confirms that AONBs are equivalent to National Parks in terms of their landscape quality, scenic beauty and their planning status. (Paras. 14 footnote 9, 115 and 116)

The status of AONBs has been enhanced through measures introduced in the Countryside and Rights of Way (CROW) Act 2000, which gave greater support to their planning and management. The statutory duties state that in exercising or performing any functions in relation to, or so as to affect, land' in these areas, relevant authorities "shall have regard" to their purposes (Page 3 of DEFRA guidance). The Act requires a management plan to be produced, and accordingly the first Kent Downs AONB Management Plan was published in April 2004. The second revision management plan (20014-2019) has been formally adopted by all the local authorities of the Kent Downs. The management plan may be viewed on our web site: <http://www.kentdowns.org.uk/publications>

Relationship of the Management Plan with production of Local Authority LDPs and Development Management (control)

- Under the CROW Act the AONB Management Plan must 'formulate the (Local Authority) policies for the management of the AONB and for carrying out their functions in relation to it'. The policies of the Kent Downs AONB Management Plan are therefore the adopted policies of all the Local Authorities in the Kent Downs. The relationship between the adopted Management Plan and the need for all LPAs to have regard to the purposes of the AONB should be clear in all Local Authority policies. And should reflect paragraph 113 of the NPPF indicating specific criteria for AONBs. Any KDAONB responses on consultations on LDF documents and planning applications under the agreed protocol will reflect the policies of the KD Management Plan and other Kent Downs AONB guidance as set out below.

Other Kent Downs AONB Guidance

Available on <http://www.kentdowns.org.uk/publications>

Kent Downs Landscape Design Handbook

Design guidance based on the 13 landscape character areas in the Kent Downs. Guidance on fencing, hedges, planting, gateways etc. to help in the conservation and enhancement of all corners of the AONB

Kent Downs Renewable Energy Position Statement

The purpose of this statement is to provide a clearly articulated position for the Kent Downs AONB partnership with regards to renewable energy technologies. It recognises that each Local Planning Authority must balance the impact of proposals for renewables on the AONB with all the other material planning considerations.

Kent Rural Advice Service Farm Diversification Toolkit

Guidance on taking an integrated whole farm approach to farm developments leading to sound diversification projects that benefit the Kent Downs.

Kent Downs Land Manager's Pack

Detailed guidance on practical land management from how to plant a hedge to creating ponds and enhancing chalk grassland

Rural Streets and Lanes A Design Handbook

Guidance on the management and design of rural lanes and streets that takes the unique character of the Kent Downs into account. This document discusses the principle of shared space and uses examples from around the UK and Europe. The Rural Streets and Lanes Design Handbook has been adopted as policy by Kent County Council.

Managing Land for Horses

National guidance providing information on equine development covering grassland management, fencing, trees and hedges, waste management and basic planning information.

Kent Farmstead Guidance and Kent Downs Farmstead Guidance

Guidance on the conservation, enhancement and development change of heritage farmsteads in the Kent Downs based on English Heritage's Kent and National Character Area Farmstead Statements. Includes an Assessment method and Design Guidance.

Kent Downs AONB Position Statement on Renewable Energy and The Companion Report

<http://www.kentdowns.org.uk/guidance-management-and-advice/renewable-energy1>

AONB Policies - the CROW Act 2000, NPPF and NPPG

- **Exercising "Duty of regard" (s85 of the CROW Act 2000)**. This can be demonstrated by testing proposals against the policies set out in the Kent Downs AONB Management Plan 2014- 2019 and supporting guidance. Under the Act, local authorities are also required to prepare an AONB Management Plan which must "*formulate the policies for the management of the AONB and for carrying out their functions in relation to it*": this plan for the Kent Downs has been formally adopted by all local authorities in Kent in which the AONB occurs.
- **NPPF Para 109,115 and 116**: These paragraphs of the NPPF emphasise the importance of protecting and enhancing valued landscapes.

- **NPPF Para 113** calls for criteria based policies in Local Plans which reflect the highest protection afforded to AONBs.
- **NPPF 13 & 14 Sustainable development:**
At the heart of the Framework is the presumption in favour of sustainable development which, for decision-taking means approving development proposals that accord with the development plan or (where the development plan is absent, silent or relevant policies are out of date) grant permission (paragraph 14). However, there are specific exceptions to paragraph 14, namely where:

" - any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole; or specific policies in this Framework indicate development should be restricted"

The protection of AONBs is one of a small number of interests identified **as such a restriction** (in footnote 9). This view has been upheld by the Hunting Butts appeal decision: Appeal Ref: APP/B1605/A/11/2164597

'56.the final part of Paragraph 14 makes it clear that (again, unless material considerations indicate otherwise) where specific policies, including Green Belt policies, indicate that development should be restricted then the presumption in favour of granting permission does not apply. That is the case here.'

"The inspector held that the green belt location meant the presumption in favour of sustainable development set out in the NPPF did not apply to the proposal.

He cited paragraph 14 of the NPPF, which says that where the development plan is absent, silent or relevant policies are out of date, permission should be granted unless "specific policies in this framework indicate development should be restricted".

Rodgers concluded that being in the green belt, "the site is subject to a specific framework policy indicating that development should be restricted". He added: "In these circumstances, paragraph 14 is clear that, even if relevant development plan policies are out of date, the presumption to grant permission does not apply."

No5 Chambers barrister Peter Goatley, who appeared for Cheltenham Borough Council at the inquiry in March, said: "Whether this outcome was intended by the authors of the NPPF, it clearly represents a significant potential limitation on the operation of the presumption."

Goatley pointed out that the examples of designated areas where a footnote to paragraph 14 suggests development should be restricted include sites of special scientific interest, areas of outstanding natural beauty and heritage coast, as well as green belt."

(<http://secure-web.cisco.com/auth=1185piERwKhForHiZICqLurDkGbule&url=http%3A%2F%2Fwww.planningresource.co.uk%2Fbulletin%2Fplanningdaily%2Farticle%2F1137607%2Fcheltenham-green-belt-homes-fail-framework-presumption-test%2F>):

The 'presumption in favour of development' in the absence of an up-to-date plan does not therefore apply to AONBs. In all cases all applications impacting on the AONB and its setting need to be tested against the NPPF paragraphs that relate to AONBs and the AONB Management Plan.

Subject: FW: PA/17/00830 - Lower Thames Crossing

From: Helen.Forster@kent.gov.uk [<mailto:Helen.Forster@kent.gov.uk>]

Sent: 16 November 2017 18:22

To: Matthew Durling

Subject: PA/17/00830 - Lower Thames Crossing

Dear Matthew,

I've read the submitted report and it details that they are carrying out a whole range of surveys throughout the survey area and it's likely that the results of these surveys will provide a good understanding of the ecological interest of the area and will be able to support the assessment of impacts resulting from the proposed development and the detailed mitigation strategy.

Please note that we are not experts on marine ecology – so our comments are mostly focused on the terrestrial habitat.

However we provide the additional points that would need to be addressed within any submission

- The results of the noise and air quality surveys must be reviewed throughout the survey period. If the results of the surveys identify that the breeding/wintering/migratory bird surveys need to be expanded to cover a wider area they must be completed prior to any planning application submission.
- The results of the ecological surveys must be regularly reviewed
 - To identify if there is a need for additional surveys to be carried out or the surveys to be repeated.
 - The results of the ecological surveys may highlight that that survey area needs to be expanded – e.g. require additional information on bat commuting routes.
- All surveys must be carried out at the optimum time of year for the species/habitats. For example it's not appropriate to carry out the NVC surveys for all habitats at the same time of year.
- The survey areas must include the proposed mitigation areas to provide an understanding about whether the mitigation can be implemented and if it will have a negative impact on other habitats/species of interest.
- All surveys must be completed when the planning application is submitted.
- Due to the scale of the development a detailed mitigation strategy will have to be produced and submitted to provide an understanding of how the impact can be mitigated and if it can be done.
- The surveys must include all areas associated with the development – this includes construction compounds.

We highlight that any development must follow the mitigation hierarchy:

The 'mitigation hierarchy' described in British Standard BS 42020:2013, involves the following step-wise process:

- Avoidance – avoiding adverse effects through good design;
- Mitigation – where it is unavoidable, mitigation measures should be employed to minimise adverse effects;
- Compensation – where residual effects remain after mitigation it may be necessary to provide compensation to offset any harm;
- Enhancement – planning decisions often present the opportunity to deliver benefits for biodiversity, which can also be explored alongside the above measures to resolve potential adverse effects.

The measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development (BS 42020:2013, section 5.5).

Please get in touch if you have any questions:

Kind Regards,

Helen

Helen Forster MCIEEM | Biodiversity Officer | **Kent County Council**

Natural Environment and Coast Team, Environment Planning and Enforcement, Invicta House, County Hall,
Maidstone, Kent, ME14 1XX

03000413374 | helen.forster@kent.gov.uk | www.kent.gov.uk

SHORNE PARISH COUNCIL

RESPONSE TO PLANNING INSPECTORATE CONSULTATION REGARDING LOWER THAMES CROSSING: REQUEST FOR SCOPING OPINION SUBMITTED BY HIGHWAYS ENGLAND, NOVEMBER 2017

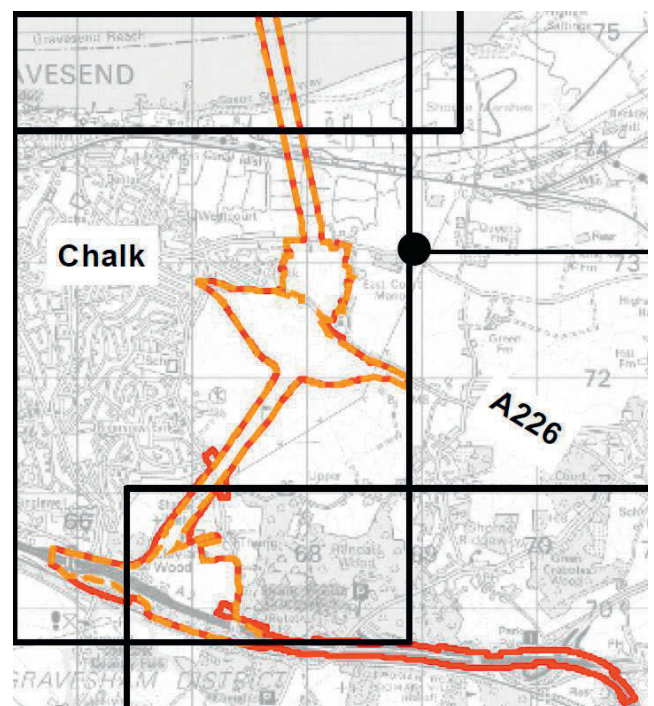
INTRODUCTION

Shorne Parish Council is a Local Authority constituted under the Local Government Acts. The Parish is located to the east of Gravesend, in the Borough of Gravesham in the north-west of the county of Kent and is therefore in the western part of the Thames Gateway/Estuary.

Shorne village (including also Lower Shorne, Thong/Riverview, Shorne Ridgeway and Pear Tree Lane) is an ancient settlement and Parish located in the Green Belt (plus including other supposedly higher protection designation land types). It is bounded by Chalk and the urban border of Gravesend to its west, and Higham Parish and the Medway Towns to the east. It extends from the A2 in the south to the middle of the Thames in the north and therefore additionally encompasses the North Kent Marshes Special Protection Area and the adjacent part of the Ramsar site.



Boundaries of Shorne Parish



Highways England "Red Line" Boundary

As can be seen from comparing the two maps above, Shorne Parish (and our close neighbour, Chalk) will, if Highways England's proposal goes forward, lose a very large area of land: Green Belt that is supposed to be protected from development and to be a Strategic Gap preventing urban sprawl between the built up areas of Gravesend and the Medway Towns. The proposal would divide Shorne Parish and Chalk either side of a massive road and junction complex, permanently taking

and destroying Green Belt land (that we and others have spent decades working to protect) as well as highly productive agricultural land, ancient woodlands, sites of special scientific interest etc. The clean air and tranquillity of the area will be destroyed forever, as will the amenity of local parks, walking routes and the Area of Outstanding Natural Beauty.

THE QUESTION POSED

The question that Shorne Parish Council has been asked, as an identified consultation body is to “inform the Planning Inspectorate of the information you consider should be provided in the ES” (Environmental Statement).

We have not been asked to comment on the content of HE’s submitted document or to identify errors, so have generally not done so.

SUBMITTED COMMENTS

1. General and Individual Points:

a) The EIA Scoping report document is very long and detailed, and highly technical in parts. We were surprised that the EIA is being undertaken after the route decision rather than prior, as would normally have been expected to be the case.

- ***Our response has been constrained by the time required to fully read and digest the large amount of information being presented, in a very short timeframe. It may not therefore be entirely comprehensive and other points may be raised later.***

b) It is difficult to properly evaluate a changing proposal, where detail of changes already made have not been provided to us, and where meetings are referred to having occurred to which we were not invited. The junction with the A2, the design of which is a major concern for us due to the large loss of land adjacent to/within an AONB, appears to have been modified but we have not seen proper drawings.

- ***Parish Councils and other local community representative groups should be key consultees and provided with the same information, simultaneously as that provided to other consultees.***

c) The documents refer to a “Decision Maker” or otherwise a Secretary of State, but do not say which one. From previous documents it has been said this is to be the Secretary of State for Transport. This would mean that the Secretary of State for Transport is to give himself permission to damage/destroy land, including SSSI’s. This does not seem appropriate.

- ***The Parish Council considers that the decisions as regards Environmental adverse effects might be better managed independently of the department causing the damage.***

d) The document reviews the history of the project. Since this process started in 2009, with traffic data and forecasting programs being even older, traffic volumes in the area have increased enormously. Many local residents believe that the location is unsuitable as traffic volume locally is too high for it to work. Options which were dismissed early on may now be viable or more

advantageous than that presently proposed. The decision to use a tunnelled river crossing removes some constraints over location. These kinds of large projects, with decisions made sequentially, can go off on a tangent away from reality.

- ***The previously discarded options D and E, and others further east, as well as a crossing at Dartford, should be revisited with up to date traffic figures and forecasting programs so as to verify that C is still the optimal location.***

e) The document reviews the project objectives. The project objectives have been altered over time and become less linked to the actual problems at the Dartford Crossing, particularly as regards south to north flow of traffic already on the M25 travelling anticlockwise.

- ***The objectives should be reviewed and updated to reflect the actual traffic problems, and for it be verified that location C will optimally solve them rather than another crossing elsewhere including at Dartford.***

f) The project has been expanded to include widening a section of the A2, required to make the project function. There are other junctions and required enabling works that need similar attention, particularly the A229 and its junctions with the M20 and M2, and the junctions of the M25 to M20 and A2 both anticlockwise to eastbound, which are not free-flowing. The project also needs to address the questions of how unsuitable traffic is to be prevented from using the A227 and A228 and other routes through villages.

- ***Works to enable free-flowing traffic in all directions of travel at the M25 junctions with the M20 and M2 need to be evaluated and included in the project as does means to prevent unsuitable traffic using the A227 and A228 to reach the LTC and to protect other unsuitable routes and village areas from excessive and inappropriate traffic.***

g) The various assessment criteria are almost entirely subjective, being “value judgements” (as in critical, common parlance) and not based on data or hard evidence. We do not agree with various of them, in some cases we strongly disagree. The value people living in an urban zone, or an area where building is threatened, place on their adjacent open and green spaces, and their concern about its loss, will be high.

- ***Subjective assessments should be avoided, care is needed in validating the results and ascribing significance to the outputs.***

h) The document describes many good aims around environmental protection but we have concerns about how these will be transformed into reality.

- ***The project needs to deliver the environmental outcomes that are specified, there need also to be firm plans for remedial actions if it does not.***

i) The present red line boundary, effectively severs the area into quarters. There is major severance of communities, of the urban area from the rural, of many footpaths, a bridle path and long distance cycle path, and access to farmland access etc. This will be a major issue south of the river Thames.

- ***Severance south of the river Thames should be discussed as a separate topic.***

j) Effect of the project on climate change is mentioned but we could not find anything discussing the local weather conditions (Estuarine weather may differ from the rest of the South East) and how this will influence the project, we would specifically mention the amount of rainfall,

and hence contaminated water run-off that will need to be contained and neutralised; sea fogs; strong winds; and problems with ice and snow given there will be a 2km long incline at 4%.

- ***There should be discussion of local weather conditions, their severity and effect on design and operational aspects.***

k) Green Belt designation is mentioned in the document (never with capital letters) but not discussed as a discrete topic or shown on maps. While infrastructure projects may not consider Green Belt as a constraint on their proposals, that is not usually the understanding of the general public, and its potential loss is a matter of great importance to many nationally and locally. In North West Kent, The Green Belt to the west of Gravesend has already been lost, and this proposal will slash through the anyway narrow remaining part to the east of Gravesend. The Parish Council together with others have expended considerable energies defending and protecting the Green Belt locally from development only to now see its destruction cavalierly proposed.

- ***Green Belt loss should be discussed as a specific item.***

l) Non-motorised users are not mentioned in connection with the proposed LTC location yet it would be an obvious route linking to the existing long-distance cycle routes and Coastal Path. Linking bus routes would be desirable.

- ***We would like to see proposals that cater for non-motorised users to use the LTC brought forward in the plans.***

m) Recreational and other areas contain lakes that are wildlife sites, these need to be retained.

- ***The effects of the project on nearby lakes (e.g. at the Inn on the Lake Hotel which is very near to the A2 junction) need to be discussed.***

n) The water table is high and flooding and flood defences are an issue as they need enhancing. There was discussion in earlier documents about enhancing flood defences along with the project but it is not clear how this can be achieved with the present proposals.

- ***We would like to see more detail of how flood defences will be enhanced.***

2 Air Quality Monitoring, Noise and Vibration

a) Existing monitoring positions relate to the former alignment of the A2. Although the AQMA was repositioned in 2011 after the A2 was realigned, the monitoring was not altered. There is only one fixed monitoring station, which remains in its original position (near Painters Ash school). All the other existing monitoring points are NO₂ tubes. These are known to be inaccurate, and the figures obtained from them are manipulated (downwards) many times before being declared correct. There are no monitoring positions east of Marling Cross (Nell's Café), and none that relate to SSSI's or recreational areas, e.g. alongside the A2, for which the regulatory limits are lower than for residential properties.

- ***Air Quality monitoring needs to be undertaken by fixed type monitoring and at locations actually related to the overall traffic route, being repositioned if needed. We would suggest additional monitoring on both sides of the road at Ashenbank Wood:Shorne Woods, at the Inn on the Lake hotel, at Boughurst Cottage, at Park Pale, and at the top of***

the rise of the M2 westbound from the River Medway. The lower regulatory limit for SSSI's needs to be borne in mind. Manipulations of data must be transparent and justified.

b) The new crossing route will cause changes in traffic volumes and types on other roads as traffic will use these to access the crossing, air quality on these routes also needs to be monitored.

- ***Air quality monitoring should also be undertaken on other routes which will experience increased traffic volumes and where there are communities residing close to roads. We suggest this will be relevant on the A227 and A228, and also the A229.***

c) The new LTC route will feature a 2km long 4% slope. There will also be a long slope from the LTC junction with the A2 to the Shorne:Cobham turn off, as well as there being a long slope from the River Medway to there. It is known that traffic, particularly diesel and HGV's, emit significantly more pollutants when on slopes than when on the flat.

- ***Calculations of predicted Air Quality changes must factor in that there are junctions and significant slopes and not be based, as presently, solely on completely horizontal lengths of road.***

d) Existing monitoring shows large inter-day variation.

- ***Baseline monitoring, including at increased locations, must be of sufficient duration to produce representative results.***

e) The significant effect criteria assessments (Table 6.5) are not appropriate or valid in rural areas with few properties.

- ***The assessment method should be altered to produce outputs in terms of % of properties affected.***

f) Traffic on the new route is already forecast to rise in the years after opening so the effect of the scheme should be assessed with predictions of further deterioration in air quality over time.

- ***Assessments should be made for years further into the future and not just for the opening year.***

g) Noise and vibration nuisance will be introduced into areas where there is none presently, or added to existing. This will (further) reduce the amenity of the areas affected. We would particularly flag up the absence of useful noise attenuation presently for the A2 around the area of the LTC junction with the A2, and also for the Shorne Woods Country Park.

- ***Poor noise attenuation in the LTC:A2 junction area should be corrected and noise reduction measures introduced/increased.***

h) The noise important areas do not include other noise receptors close to the A2, e.g. Boughurst Cottage or the Harlex yard.

- ***All relevant properties close to the route need to be included in noise mitigation measures.***

i) There is discussion about noise from ventilation towers and plant. With the presently suggested tunnel portal location many residential properties, St Mary's Church (Chalk) and the Gravesend Crematorium could all be badly affected. Vibration during construction and operation would also badly affect the same areas.

- ***We would like to see the tunnel portal location discussed in terms of impact on Chalk (and subsequently moved southwards).***

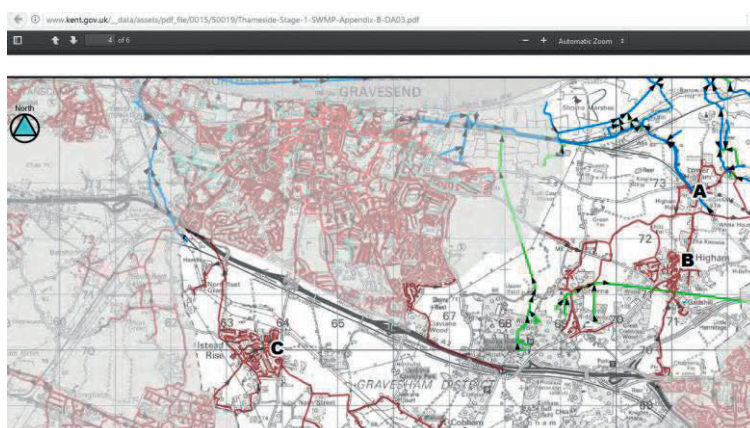
3. The North Kent Marshes ecosystem and other water issues

a) The North Kent Marshes ecosystem comprises, from west to east, areas of increasingly high environmental protection designated, from Green Belt via SSSI to Special Protection Area to RAMSAR site. The Marshes interconnect, particularly in terms of their water supply. The proposed crossing has potential to damage the Marshes in a variety of ways, both directly and indirectly

- ***We would like to see evidence of understanding that the North Kent Marshes are a single, internationally important entity, an interconnected ecosystem whereby damaging one part damages the entirety.***

b) The overall water supply to the marshes comes from two directions: freshwater drains northwards from the lands to the south and water from the tidal River Thames permeates southerly with some salinity, variably through the chalk and alluvium depending on the tides.

The KCC map below shows that the principal water supply to the marshes derives from Shorne Woods Country Park.



On drawing 14.1, sheet 1/5 this is shown as culverted. We are not certain that is genuinely the case but rather believe that it is an underground river/stream. In either circumstance the LTC alignment and adjacent permanent land take coincides with a considerable length of this water course and physical drainage area, which would effectively remove the main water supply to the marshes: once in the marshes, the water flows from west to east through the ditches as “rivers”.

- ***The importance of the water supply to the marshes must be recognised, included in the relevant hydrology sections. Plans must be included to ensure the water supply is not compromised but is protected and safeguarded.***

c) Sectional drawings have not been included in the scoping application document, the most recent shared with us showed the tunnel rising very close to the surface of the marsh and therefore leaving the chalk layer and invading into alluvial clay layers. This breach would affect the drainage in that area by increasing permeability and potentially lead to drying out.

- ***The tunnel vertical alignment must be revised to ensure that it remains well inside the chalk layer and does not rise to the surface under the marshes.***

d) The documentation refers to the tunnel portal as being below the groundwater level, this will require considerable dewatering both during and after construction.

- ***We are concerned about the possibility of dewatering in the marshes supply areas and for agricultural areas adjacent. We would like to see an explanation of what will be the consequences in practice and how these will be mitigated locally.***

e) The drawing Figure 14.5, sheet 2/5 shows four water abstraction points close to the tunnel route.

- ***There needs to be discussion of what these water abstraction points are presently used for, whether such use will be compromised, and how the use will be maintained during construction and then subsequently.***

f) The LTC south of the Thames will have a 4% incline for 2km of road surface, this will create a very large volume of contaminated water run-off, which must not be allowed to reach the marshes.

- ***We want to see more explanation of how this contaminated water is to be contained and treated to ensure that routinely, and in high volumes of rainfall, there is no possibility of contamination.***

g) The North Kent Marshes Internal Drainage Board (hosted by Medway Council) has responsibilities for the water balance of the protected marsh areas.

- ***While they have been consulted once recently, there needs to be much closer liaison and discussions about how the marshes ecosystems are to be protected.***

h) Dealing with and understanding the effects of the project and the threats it poses are made very difficult by the issues being divided into many different chapters.

- ***It would be beneficial for understanding risk to specific areas such as the North Kent Marshes and affected areas of AONB for there to be discussion which is receptor based rather than threat based.***

i) During construction there will also be other contamination threats from the tunnelling and boring itself, such as creation of routes of flow of contaminated waste materials.

- ***We are also concerned about how the water of the marshes will be protected from contamination arising during the tunnelling.***

4. Landscape and other environmental issues

a) During the 2016 consultation the project was sold to the public with a bucolic “artists impression” (see below). Since then it was first hinted, then stated that the tunnel and link road will be three lanes each way, and that a long section of the A2 will be widened to five lanes each way as part of the project. The scoping document similarly tells us that there “could” be a 25m high ventilation tower and plant, an escape route for prohibited vehicles and an access route for emergency vehicles (both to and from which road?), crossing offices/control/service building and parking, pumping stations, cameras, signalling gantries, fire fighting water storage etc. The LTC route is close to and affecting the setting of an Area of Outstanding Natural Beauty (particularly affected by the now massively sprawling A2 junction), listed buildings and the amenity of a

considerable population. The ventilation tower threatens to pollute the North Kent Marshes and the lives of local residents.



- ***We think it is reasonable to expect there to be explicit information about the intended associated structures and detailed discussion of how these will be camouflaged in the landscape, what the environmental effects will be etc.***

b) The “red line boundary” has recently been extended but no explanation has been given in the documents as to the reasons. Equally, although the A226 junction has been deleted (for which we are very grateful), a large area of land is still shown there as being permanently taken.

- ***We would like to see an explanation and details of why land is being permanently taken.***

c) There is a large network of footpaths, bridleways and cycle tracks etc in the affected area, including the Gravesham “Green Grid”, these are being severed by the LTC route.

- ***We would like to see more information about how walking routes are to be maintained, both during and after construction in a way that retains and potentially enhances their amenity for users.***

d) There are lakes at the Inn on the Lake hotel which will be very close to the A2 junction.

- ***Water features close to the LTC must be discussed as to how they will be protected and their water supplies safeguarded.***

5. Cultural Heritage

a) There is no mention of the Victorian rifle targets at the firing range, or the former Gravesend Airport/RAF Gravesend.

- ***Need to ensure all historical sites/assets are included, there may be increased risk of unexploded ordnance.***

b) The North Kent Marshes are part of the Cultural Heritage of the area, their ditch pattern is almost unchanged since it was mapped in 1694. The area of the proposed tunnel portal is shown below (source: Kent History Centre, Maidstone).



- ***The Cultural Heritage importance of the Marshes must be recognised in the documents.***
- c) There is a significant history of Roman occupation in the area and it is highly likely that there may be archaeological finds.
- ***Finds should be fully characterised and photographed, to be available on-line. Finds should be held by local museums and not taken off to distant Universities.***
- d) The overall landscape is of cultural significance as Charles Dickens lived in and wrote about the area.
- ***Literary connections should be included.***
- e) The marshes have not been identified as very high value historic landscape but we believe that to be incorrect.
- **The assessment should be revisited.**

Councillor Susan Lindley,
Chair of Planning and Highways Committee
On behalf of Shorne Parish Council
30th November 2017

From: [Lloyd, Helen](#) on behalf of [Customer](#)
To: [Lower Thames Crossing](#)
Subject: RE: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation
Date: 03 November 2017 12:51:52

Good Afternoon Mr. Breslaw,

Thank you for your email.

Both the addresses shown on the attachment you have sent us do not fall within our distribution network.

If there is anything else we can do for you please let me know.

Kind Regards,

Helen Lloyd,
Customer Service Advisor

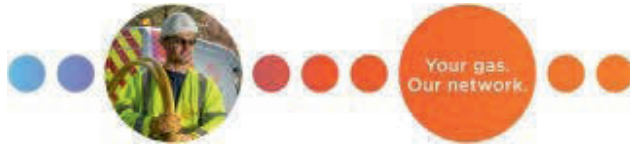
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E: customer@sgn.co.uk

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From: Lower Thames Crossing [mailto:LowerThamesCrossing@pins.gsi.gov.uk]
Sent: 03 November 2017 11:47
Subject: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation

Dear Sir/Madam

Please see the attached correspondence on the proposed Lower Thames Crossing.

Please note the deadline for consultation responses is 01 December 2017 and is a statutory requirement that cannot be extended.

Kind Regards,

Michael Breslaw
EIA and Land Rights Advisor
Major Applications and Plans

The Planning Inspectorate, 3D, Temple Quay House, Temple Quay, Bristol BS1 6PN

Direct line: 0303 444 5063
Helpline: 0303 444 5000
Email: Michael.Breslaw@pins.gsi.gov.uk

Web: <https://infrastructure.planninginspectorate.gov.uk/> (National Infrastructure Planning)

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From: [Nicola Downes EI](#)
To: [Lower Thames Crossing](#)
Cc: [Toni Walmsley Macey EI](#)
Subject: RE: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation
Date: 07 November 2017 17:08:52

FAO: Gail Boyle

Dear Gail,

Thank you for your consulting Surrey County Council, as Highway Authority, on the Environmental Impact Assessment - Scoping Report for the proposed Lower Thames Crossing.

I have had a look at the Scoping Report, and the proposed development is unlikely to have an impact upon the highway network within Surrey. On this basis, I can confirm that we do not have any comments to make on the Scoping Report.

Regards,

Nicola

Nicola Downes
Senior Transport Development Planning Officer

Surrey County Council
Room 365, County Hall
Penrhyn Road
Kingston Upon Thames KT1 2DW
Direct Tel: 020 8541 7426
www.surreycc.gov.uk/tdp

From: Lower Thames Crossing [mailto:LowerThamesCrossing@pins.gsi.gov.uk]
Sent: 03 November 2017 12:22
To: Nicola Downes EI <nicola.downes@surreycc.gov.uk>
Cc: Toni Walmsley Macey EI <toni.walmsleymacey@surreycc.gov.uk>
Subject: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation

Dear Nicola

Please see the attached correspondence on the proposed Lower Thames Crossing.

Please note the deadline for consultation responses is 01 December 2017 and is a statutory requirement that cannot be extended.

Kind Regards,

Michael Breslaw
EIA and Land Rights Advisor
Major Applications and Plans

The Planning Inspectorate, 3D, Temple Quay House, Temple Quay, Bristol BS1 6PN
Direct line: 0303 444 5063
Helpline: 0303 444 5000
Email: Michael.Breslaw@pins.gsi.gov.uk

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Gail Boyle
Senior EIA and Land Rights
3D Eagle Wing
Temple Quay House
2 The Square
Bristol, BS1 6PN

Your Ref: TR010032-000007

Dear Gail

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

Proposed application by Highways England for an Order granting Development Consent for the Lower Thames Crossing

I refer to your letter dated 2nd November 2017 regarding the above matter and to your request that the local planning authority (LPA):

- inform the Planning Inspectorate of the information we consider should be provided in the Environmental Statement (ES); or
- confirm we do not have any comments.

Thurrock Council is a unitary authority in South Essex representing over 165,000 residents and is the recipient of nearly two thirds of the proposed development. The Council therefore have a number of comments in relation to the Highways England Lower Thames Crossing Environmental Impact Assessment (EIA) Scoping Report dated October 2017. The Council's full response has been provided within a Schedule of Comments/Observations in Appendix 1 of this letter.

The following sections of this letter highlight the Council's key comments and/or concerns. However, it should be noted that these sections are solely a snapshot of the full response, and therefore it is important that the detailed comments given in Appendix 1 are taken into consideration. Moreover Highways England should also give regard to local policies to align with Thurrock's Local Plan.

- 1) In summary, Thurrock Council has not been given sufficient material from Highways England to allow the Council to determine how this scheme meets their declared objectives, nor the respective balance of priorities that resulted in the choice of crossing and chosen road alignment. Reflecting the scale and significance of this national project, a full and comprehensive understanding of the transport and land use implications is required. A robust and comprehensive analysis should be undertaken and presented within a standalone chapter within the ES. This would provide an understanding of

business case around choice of location and that proposals demonstrate the potential to unlock housing growth.

- 2) Thurrock Council has for a number of years stated that the need for a new crossing requires further evidence. Further work is required to explore alternative modes of travel. Therefore, it must be demonstrated how the need for providing or safeguarding additional capacity (passenger and freight) as part of the decision-making process has been considered in terms of alternative options. This must underpin assessment of the need for the crossing and choices around the need for two or three lanes of new motorway alongside appropriate improvements to local roads to bus services and rail networks. A thorough analysis of appropriate and acceptable options is required to evidence how proposals comply with Government Guidance to support sustainable travel and land use integration. A detailed and stand-alone analysis would reduce the significant risk in solely catering for road traffic to the exclusion of wider enhancements to transport and mobility that would better meet the wider Essex and Kent communities.
- 3) The environmental harm caused by the scheme has not been fully assessed, quantified or demonstrated as part of the announcement of the preferred route. This in turn has impacted this scoping report. This includes the impacts on health and local amenity, which may not be out-weighed by any economic or transport benefits - clearly further work is required on air quality and public health before the Government makes a decision. It must be given weight alongside economic and transport benefits. The World Health Organisation has stated that there is no safe level for particulate matter given its carcinogenic properties. Despite considerable recognition [\[click\]](#) by DEFRA and Public Health England – with the Local Government Association; as Public bodies we are not demonstrating to our public how we are taking seriously the health risk associated with vehicle emissions. New analysis and added priority must now be given within the ES to PM_{2.5} particulate matter.
- 4) The Scoping Report does not acknowledge all of the concerns the Council faces in terms of the health and wellbeing of the communities we represent. Without clear evidence to the contrary, the Council is very concerned that life outcomes may be further impacted by the proposed crossing. This is particularly in relation to the variation experienced across the borough in terms of life expectancy, incidence of and premature mortality from cancer, hospitals admissions and premature mortality due to cardiovascular disease and respiratory illnesses. Therefore, the Council strongly request that a separate Health Impact Assessment is undertaken, the methodology of which should be agreed with the Director of Public Health in the Council and in liaison with all other impacted authorities' Directors of Public Health and Public Health England. This will ensure that any negative consequences of the development are identified and mitigated, and that opportunities for improving the well-being of the community are maximised. Appendix 2 of this letter provides a full justification for the reasoning behind why a separate Health Impact Assessment should be undertaken for the project from a Thurrock perspective. The Council has also noted that precedents have been set by several Nationally Significant Infrastructure Projects (NSIPs), such as the Silvertown Tunnel in London and the A14 in Cambridgeshire, which completed Health Impact Assessments as part of their applications.

Key General Comments:

- 5) The initial chapters reflect the current existing knowledge of the proposed project. The proposed scheme is continuing to evolve, and therefore it is essential the Council understand the reasoning for changes, and is genuinely consulted on changes to the Scheme design. Highways England should also give the Council the opportunity to inform the ongoing changes to the project design. Significant changes are being made by Highways England to the current preferred route that are in advance of any robust published traffic model, and therefore this appears to be occurring without a clear foundation i.e. it is unclear how Highways England are arriving at the decision for Route 3 as opposed to Route 4, and in turn how they are making significant changes to Route 3, in advance of an approved traffic model. This leads to significant concerns over the validity and robustness of their preferred route.
- 6) The wider impact on Thurrock's socio-economic mix has not been considered, for example the effect on housing delivery and how a Lower Thames Crossing will impact on future growth and investment. The existing and emerging Thurrock Local Plan sets out the basis on which growth is planned, to balance the opportunities of growth in homes and jobs. As the new Local Plan is progressed, the Council requests that an additional and standalone socio-economic study is undertaken to assess in detail the impact the Lower Thames Crossing would have on the Borough. This should also take into consideration the wider economic benefits/dis-benefits.
- 7) The Council has major concerns regarding the proposed junction with the A13 and the A1089. This is likely to be significantly elevated, which would be very prominent in the landscape. The elevation in combination with the complex arrangement is also likely to cause adverse visual effects, worsen air quality and increase noise levels significantly. As noted in the Cultural Heritage section below, the junction is also located on a nationally significant Scheduled Monument, and therefore the construction of this junction would have direct effects on (through the removal of) the scheduled monument. The significant adverse effects caused by this junction will need considerable mitigation e.g. tunnelling to ensure the effects are reduced and the introduction of the junction is acceptable. In addition to the strategic routing model for traffic across the region, we expect Highways England to undertake a detailed micro simulation of this new junction and the local road network, to prove that the full impacts have been understood, and that it represents a workable solution compared to all other alternatives.
- 8) The Council would like to better understand Highways England consideration for a new direct spur into Tilbury, and the respective role of the current A1089. This new spur would re-route all of the Port of Tilbury traffic south of the town rather than through the town on the A1089. This new spur that Highways England have now included in their proposal, would introduce new residential receptors to air quality issues and expose new parts of the town to noise. This fails to recognise the ambition of the Council to better link Tilbury with the river. In addition to the strategic routing model, we expect Highways England to undertake a detailed micro simulation of the proposed road changes, to understand the impact on the local road network and the implication of changes to the local roads following any de-trunking.

- 9) It is a requirement of the new EIA regulations (Infrastructure Planning (Environmental Impact Assessment) Regulations 2017) to assess 'the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to the development'. Therefore, under these new regulations Highways England should undertake sensitivity testing to assess unusual but not uncommon traffic scenarios due to major accidents, e.g. the closure of both crossings, and the impact this would have on traffic/transport, noise, air quality, people, and communities. This assessment should be presented within the ES, and must recognise the impact of closures to the crossing on the jobs and livelihoods across the borough.
- 10) The Scoping Report does not fully justify the reason Location C was chosen as the preferred route. The reasons provided focus on the Scheme objectives and cost, and do not take into consideration the effects on the environment / communities / Thurrock's Strategic Growth Plans. The Council requests that full justification regarding the preferred route selection, which includes outlining a comparison of the environmental effects of each option to reach the decision on the preferred route, is provided in the ES.
- 11) The report mentions opportunities to deliver environmental enhancements, however there is no explicit mention of any enhancements that have been identified. Highways England need to consider and identify opportunities for enhancements throughout the duration of the design process, and include these in the ES. Opportunities should consider (but should not be limited to) enhancements to the existing public rights of way network, in line with Thurrock Rights of Way Improvement Plan (which is currently in draft form), and enhancements to the landscape and air quality. Highways England need to demonstrate through their design principles how the earthworks and subsequent landscaping and planting will provide a new corridor for wildlife, and with it, a new route for non-motorised travel that brings together new and existing rights of way. Aside from direct opportunities through careful scheme design to build in future new connections, the Council also advises Highways England to utilise their Environment and Air Quality Designated Funds to ensure that environmental enhancements are delivered across the widest possible network of rights of way, in order to maximise local opportunities for reduced car travel; at least to the extent that it balances the increase in total traffic mileage generated by the new crossing and the new motorway.
- 12) The report states that the Lower Thames Crossing north of the Thames will be at grade or on embankments, however though the Kent section it will be in a deep cutting which is likely to lessen its visual effects. The reasoning for this will need to be clearly presented and fully justified. To assess the landscape and visual effects, Highways England needs to provide plans showing which sections would be on embankments and which at grade. The Council would also like to see 3D visualisations for the Scheme.
- 13) The redline boundary only takes account of the road area itself and does not consider the space that will be required for attenuation storage and flood zone compensation. It is critical to consider this as early as possible to ensure the Council do not have any space issues further down the line.

- 14) The Council has key concerns regarding the adverse visual, noise and air quality effects that are likely to result from the Lower Thames Crossing. The Council therefore believes that Highways England should evidence how and why it has chosen not to provide tunnelling beneath Thurrock, as this would alleviate these effects.
- 15) Due to the scale of the project, Highways England needs to demonstrate impacts through a thorough and comprehensive construction impact assessment, and include appropriate mitigation, for the project. The method of boring the tunnels has already been suggested as being from Thurrock southwards under the Thames. This creates air quality and noise implications. In addition, the majority of the new motorway is within Thurrock and this exposes residents to significant noise and air quality issues. Highways England has not demonstrated why this cannot be built from South to North.
- 16) Thurrock has been very successful in growing jobs within the Borough, and there is a continued need to accelerate housing delivery. Highways England need to demonstrate through a detailed standalone study how housing opportunities might in future be impacted by the adverse impacts of this new motorway i.e. noise, pollution and visual impact. The LTC could further exacerbate negative perceptions of the Borough as a place to live, thereby harming the delivery of homes and, as a result, stifling economic growth.

Key Topic Specific Comments:

- **Air Quality** - *The Council recommends that additional baseline air quality monitoring is established at sensitive receptors along the new proposed link road to Tilbury, just off the A1013 along Heath Road, and along Baker Street, including Baker St/ Heath Road at A13/A1089 junction. Additionally, as of November 2017 the Council, in response to the proposed crossing, has set up its own additional NO₂ diffusion tube monitoring sites in key locations. The data from these should be included within Highways England's air quality assessment for establishing a baseline and for model verification. Please see the Schedule of Comments/Observations in Appendix 1 for the location of these additional monitoring sites.*
- **Air Quality** - PM_{2.5} needs to be considered within the air quality assessment. The evaluation of significance of this pollutant should also be assessed, particularly as it is the very fine elements of particulate matter (i.e. PM_{2.5}), such as brake and tyre wear emissions and diesel exhaust emissions that contribute to the bulk of PM_{2.5} emissions and it is this element which is most prejudicial to health.
- **Cultural Heritage** - Consideration needs to be given in the EIA for the appropriate recording of the scheduled monument (Crop mark complex, Orsett) at the junction with the A13 and A1089 considering the extensive damage that will be caused. Consideration needs to be given to undertaking a total excavation of the scheduled area and associated elements of this nationally important complex.
- **Cultural Heritage** - Tilbury and Coalhouse Forts as combined monuments, forming defensive structures along the Thames, should be considered as Very High Value receptors. This should be discussed with Historic England.
- **Landscape** - *The Landscape and Visual Impact Assessment should have regard to the new (currently draft) "Landscape Character Assessment for Thurrock" and the "Land of the Fanns Character Assessment" which covers a large proportion of the affected landscape north of the Thames. The Land of the Fanns is a Heritage Lottery Fund Landscape Partnership scheme which should be considered as part of any landscape, ecology and cultural heritage assessment.*

- **Landscape** - The Scoping Report provides no justification for the decision to adopt a 2km Zone of Visual Influence (ZVI) for the landscape and visual impact assessment. This should follow standard best practice and identify a ZVI which is likely to be much larger. This is particularly important for the land to the north of the A13, which is much more open. It is likely that the route (which is likely to be elevated through this area) would be very prominent from a long distance e.g. from Thorndon Country Park in Brentwood.
- **Landscape** - No methodology has been outlined for the production of the photomontages. These should be produced for year 1 and year 15, to show the future visual impact of the proposal. These should be produced for key views such as the proposed tunnel, the A13 and Tilbury junctions, the Tilbury loop railway and where the route crosses through the Mardyke Valley.
- **Landscape** - Highways England will need to agree any proposed viewpoint receptors with the Council, in advance of the assessment commencing. These will need to ensure that all settlements are assessed, as well as sites used for public recreation, cultural heritage assets, public rights of way and existing transport routes. Long views will also need to be assessed e.g. from Thorndon Park in Brentwood. Some future baseline viewpoints will also need to be considered.
- **Landscape** – Highways England suggest the construction of the tunnel under the Thames is likely to be from north or south. The basis for this assertion is unknown and Highways England need to set out why this is the case. This would result in large areas of land east of the power station site being set aside for construction purposes. This is adjacent to the Two Forts Way recreational route. The material extracted during the tunnel construction is likely to be stored in this area, which will have adverse visual effects for at least six years. The ES will need to take into consideration the maximum proposed heights of stored materials plus heights of machines etc. being used during the construction. It is also proposed that a substation will be required in this area. Again, the ES will need to take the size of this into consideration. The Council would like to see the heights of the stockpiles, machinery, and substation. The final restoration of this area will need to demonstrate landscape and ecological benefits with no spoil left in this area over the long term e.g. restoring the land immediately west of Coalhouse Fort as coastal grazing grass or wetland.
- **Landscape and Biodiversity** - The report recognises that the scheme would have a direct effect on the Orsett Fen Open Access Area. Highways England need to ensure that there is connectivity, and consider mitigation measures for landscape, ecology and water management that can be integrated to ensure that the historic fenland habitat can be recreated.
- **Biodiversity** - The report details a comprehensive list of protected species that are being surveyed. However, there is no mention of barn owls. Barn owls should be considered and surveys undertaken (if required), as barn owls have the potential to be impacted within a buffer zone of up to 1.5km from new roads.
- **Geology and Soils** – *Highways England need to demonstrate that particular regard is given to the potential contamination at the former Goshems Farm landfill (THU0048) where the tunnel portal would be located. The Ground Investigation will need to fully determine the level of contamination present here.*
- **Materials** - No methodology has been outlined for the materials assessment. The methodology needs to be fully defined within the ES to ensure full understanding of how the conclusions are reached. Consideration should be given to the calculation of the embodied carbon emissions of the materials required to

construct the Scheme, as a good benchmark for comparison against other similar road schemes.

- **Noise and Vibration** - Highways England need to agree the locations of the noise surveys with the Council, although the indicative noise monitoring locations outlined in the Scoping Report are generally in satisfactory locations. The Council would recommend a long-term monitor is set up in Baker Street, as this would be closest to the proposed southbound road to the A13 eastbound slip. Further monitoring may also be necessary in the south of Tilbury where the link could be preferentially used by the existing Tilbury port traffic rather than the A1089 dock access road.
- **People and Communities** - The people and communities assessment should also consider Coalhouse Fort within the community facilities assessment, *the amenity of people living and working in the area and using established leisure facilities such as parks, and severance in the context of dividing the borough and creating two separate sets of communities.*
- **People and Communities** - *Highways England need to clarify how the impacts on public rights of way will be mitigated. The use of green bridges and underpasses to replace any public rights of way that are permanently affected by the development would be beneficial. Highways England should also take into consideration Thurrock's Public Rights of Way Improvement Plan (which is currently in draft form).*
- **Climate** - *Embodied carbon from the use of materials within the construction needs to be considered within the climate assessment, as this makes up approx. 70-80% of the construction carbon footprint. Greenhouse gas emissions from the increased volume of traffic also needs to be considered within the operational assessment for climate.*
- **Cumulative Effects** - *Tilbury Energy Centre needs to be included within the assessment of cumulative effects (as well as Tilbury2). In addition, although DP World London Gateway has been developed, the capacity at this site will continue to increase. Therefore, the cumulative assessment within the ES should also take this into consideration; this is particularly important within the noise and air quality cumulative assessments.*

Proposed Structure of the ES

The proposed structure and content of the ES is set out in Chapter 17 of the Scoping Report. However, it is noted that the structure of the topic specific chapters includes a 'Regulatory Framework/NPSNN requirements' section. However, Highways England should also give regard to local policies, to align with Thurrock's Local Plan.

Additionally, as noted previously, the Council does not believe that the topics listed (for inclusion within the ES) will enable a thorough and comprehensive assessment on health and wellbeing and on the local economy. Therefore, the Council requests that the following key areas must form distinct and standalone part of the Development Consent Order Application

- a standalone Health Impact Assessment
- a standalone Socio-Economic Study
- a standalone assessment of Transportation and Land use
- a standalone multimodal assessment
- a standalone assessment of the construction impacts

Summary

I trust that the comments and enclosures are of assistance. Again, I would like to reiterate that the information outlined in this letter solely highlights the key comments/concerns the Council has. Please refer to the Schedule of Comments/Observations contained in Appendix 1 of this letter, for the full detailed response from the Council.

Thank you for this opportunity to comment on the EIA Scoping Report. If you need any further assistance or wish to discuss any matters arising, please feel free to contact me.

Yours sincerely,



Steve Cox
Corporate Director, Place

APPENDIX 1 – Schedule of Comments/Observations on the Lower Thames Crossing Environmental Impact Assessment Scoping Report

APPENDIX 2 – Justification for a full Health Impact Assessment

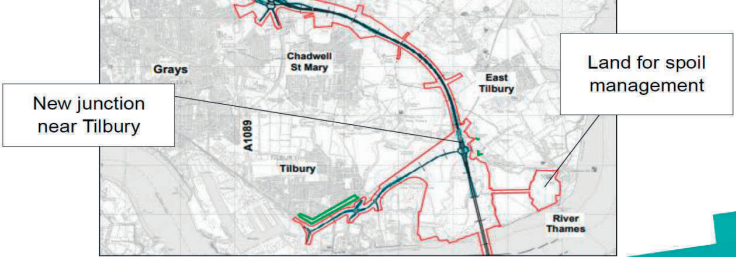
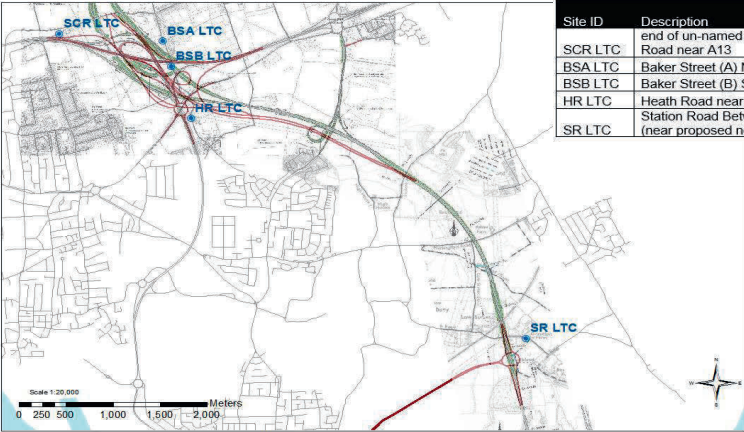
Appendix 1 Thurrock Council Response to Lower Thames Crossing - Environmental Impact Assessment Scoping Report

Schedule of Comments and Observations

Promoter	Highways England
Reviewer	Thurrock Council
Document Reviewed	Lower Thames Crossing - Environmental Impact Assessment Scoping Report

ID	Chapter / Section	Comments/Observations (Including Recommendations)
1	Overall Comment	The Council strongly requests that a Health Impact Assessment (HIA) is required and that this is completed in relation to this proposed development, to ensure that any negative consequences of the development are identified and mitigated and that opportunities for improving the well-being of the community are maximised. We note that an Equalities Impact Assessment is being undertaken as a separate assessment. We have also noted that precedents have been set by several NSIP developments such as the Silvertown Tunnel and the A14 have had health impact assessments completed as part of their applications.
2	Overall Comment	The Council has major concerns regarding the proposed junction with the A13 and the A1089. This is likely to be significantly elevated, which would be very prominent in the landscape. The elevation in combination with the complex arrangement is also likely to cause adverse visual effects, worsen air quality and increase noise levels significantly. As noted in the Cultural Heritage comments below, the junction is also located on a nationally significant Scheduled Monument, and therefore the construction of this junction would have direct effects on (through the removal of) the scheduled monument. The significant adverse effects caused by this junction will need considerable mitigation e.g. tunnelling to ensure the effects are reduced and the introduction of the junction is acceptable. In addition to the strategic routing model for traffic across the region, we expect Highways England to undertake a detailed micro simulation of this new junction and the local road network, to prove that the full impacts have been understood, and that it represents a workable solution compared to all other alternatives.
3	Overall Comment	The Council would like to better understand Highways England consideration for a new direct spur into Tilbury, and the respective role of the current A1089. This new spur would re-route all of the Port of Tilbury traffic south of the town rather than through the town on the A1089. This new spur that Highways England have now included in their proposal, would introduce new residential receptors to air quality issues and expose new parts of the town to noise. This fails to recognise the ambition of the Council to better link Tilbury with the river. In addition to the strategic routing model, we expect Highways England to undertake a detailed micro simulation of the proposed road changes, to understand the impact on the local road network and the implication of changes to the local roads following any de-trunking.
4	Overall Comment	The Council has key concerns regarding the adverse visual, noise and air quality effects that are likely to result from the Lower Thames Crossing. The Council therefore believes that Highways England should evidence how and why it has chosen not to provide a tunnel beneath Thurrock, as this would alleviate these effects.
5	Overall Comment	The wider impact on Thurrock's socio-economic mix has not been considered, for example the effect on housing delivery and how a Lower Thames Crossing will impact on future growth and investment. The existing and emerging Thurrock Local Plan sets out the basis on which growth is planned, to balance the opportunities of growth in homes and jobs. The visual and aesthetic aspects of the development alone will affect the monetary value of residential neighbourhoods which in turn will lower house values, which could ultimately change the social mix by reducing higher income groups (those who can afford to choose where they live are discouraged from settling in the borough). Also there may be an impact on future development, as developers will not build homes for higher income groups as there will be no demand. Mixed and balanced communities are an essential component otherwise unfair disadvantage is based on the borough, for example deprived communities place greater demand on healthcare services and current local skill shortages will become worse. An increase and improvement in open and greenspace that is restorative and relaxing must compensate the scheme to ensure Thurrock remains a desirable place to live and proposals are needed in this regard. As the new Local Plan is progressed, the Council requests that an additional and standalone socio-economic study is undertaken to assess in detail the impact the Lower Thames Crossing would have on the Borough.
6	Chapter 1 Introduction and Chapter 2 The Project / General	The initial chapters reflect the current existing knowledge of the proposed project. The proposed scheme is continuing to evolve, and therefore it is essential the Council understand the reasoning for changes, and is genuinely consulted on changes to the Scheme design. Highways England should also give the Council the opportunity to inform the ongoing changes to the project design. Significant changes are being made by Highways England to the current preferred route that are in advance of any robust published traffic model, and therefore this appears to be occurring without a clear foundation i.e. it is unclear how Highways England are arriving at the decision for Route 3 as opposed to Route 4, and in turn how they are making significant changes to Route 3, in advance of an approved traffic model. This leads to significant concerns over the validity and robustness of their preferred route.
7	Chapter 1 Introduction / Section 1.2.8	The Council wants to understand how the new crossing would open opportunities for regeneration in addition to how the crossing will benefit the local community.
8	Chapter 1 Introduction / Section 1.3.1	Under 'Project Objectives', there is a clear objective for the Environment and Community to minimise adverse impacts on health and the environment, yet no suggestion has been made that there will be a full health impact assessment undertaken as a separate chapter or as a standalone assessment. This project objective will not be achieved without this.
9	Chapter 1 Introduction / Table 1.3	Highways England need to demonstrate how the development would benefit the local economy of Thurrock and not just the regional economy.
10	Chapter 2 The Project / Section 2.2.7	The Council wants to understand how the new junctions would be managed safely to reduce the number of road traffic accidents resulting from the new road network.
11	Chapter 2 The Project / Section 2.5.1	Highways England need to consider the use of green bridges including foot bridges and underpasses. This not only creates a visually pleasing environment but may potentially work towards mitigating some of the air pollution that already exists as well as that possibly generated by the proposed development.
12	Chapter 2 The Project / Section 2.5.3	The report lists a number of new bridges, underpasses etc. but does not provide any detail as to which if any will be provided for public rights of way.
13	Chapter 2 The Project / Section 2.6.1	The report states that the Lower Thames Crossing north of the Thames will be at grade or on embankments, though the Kent section will be in a deep cutting which is likely to lessen its visual effects. The reasoning for this will need to be clearly presented and fully justified. To assess the landscape and visual effects, Highways England need to provide plans showing which sections would be on embankments and which at grade.
14	Chapter 2 The Project / Section 2.6.1	The Council would like to see 3D visualisations for the Scheme to ascertain the visual impact, especially in regard to where the road will be on embankments.
15	Chapter 2 The Project / Section 2.7	The proposed lighting design has not yet been finalised. This will be an essential component of any Landscape and Visual Impact Assessment (LVIA) as it is likely to have major effects if lighting is proposed on elevated sections across the Mardyke Valley.
16	Chapter 2 The Project / Section 2.9	Non-Motorised User Provision - The statement recognises the need to ensure public rights of ways remain open by providing suitable crossing points and/or diversions. It will be vital that the studies take into account the closure of public rights of ways during the construction period, which is estimated to be 6 years.
17	Chapter 2 The Project / Section 2.10	Highways England need to consider what the flood defences look like and their impact on accessibility to the river. Visual impact and access to nature can impact on health and well-being.

18	Chapter 2 The Project / Section 2.11.2	Further clarification is required in relation to the potential detour route for over-sized vehicles in terms of where this is likely to be and how it will be safely managed. The council request an explanation on how this will impact on reducing the number of such over-sized vehicles still accessing the Dartford Crossing.
19	Chapter 2 The Project / Section 2.12	The construction of the tunnel under the Thames is likely to be from north or south. This would result in large areas of land east of the power station site being set aside for construction purposes. This is adjacent to the Two Forts Way recreational route. The material extracted during the tunnel construction is likely to be stored in this area which will have visual effects. The EIA will need to take into consideration the maximum proposed heights of stored materials plus heights of machines etc. being used during the construction. It is also proposed that a substation will be required in this area. Again, the EIA will need to take the size of this into consideration. The Council would like to see the heights of the stockpiles, machinery, and substation. The final restoration of this area will need to demonstrate landscape and ecological benefits e.g. restoring the land immediately west of Coalhouse Fort as coastal grazing grass or wetland. In addition, the longer term the impact of the 25m chimneys at the tunnel mouths to filter air will create long term visual impacts.
20	Chapter 2 The Project / Section 2.12.5	It is noted that consideration will be paid to the feasibility of using rail and river to transport materials during construction which will aim to reduce the level of transport by road. If found to be feasible it is possible that additional construction works will be required. This may include the construction of new jetty or modification of a new jetty, as well as new rail heads. Consideration of the potential impacts of the possible additional construction works needs to take into account a potential for increases in noise, air pollution and dust emissions.
21	Chapter 2 The Project / Section 2.14.4	Consideration of the mental health and wellbeing of landowners whose land falls within the design boundary (64 residential and 4 commercial properties North of the Thames) and may be acquired for building the new junction at the A13 needs to be investigated. Further information is required in relation to how this will be managed, and what will likely happen should landowners decline to sell their land/properties and potential impacts on their livelihoods; whilst the project will create new employment opportunities, the Council would like to see whether it is possible that it will damage existing ones.
22	Chapter 2 The Project / Section 2.14.5	The report recognises that the scheme would have a direct effect on the Orsett Fen Open Access Area. It will be necessary for Highways England to ensure that there is connectivity and consider mitigation measures for landscape, ecology and water management that can be integrated to ensure that the historic fenland habitat can be recreated.
23	Chapter 2 The Project / Section 2.18	A residence scheme should be considered for those living in Thurrock and areas affected in Kent.
24	Chapter 3 The Reasonable Alternatives Considered / General	The Scoping Report does not fully justify the reason Location C was chosen as the preferred route. The reasons provided focus on the Scheme objectives and cost, and do not take into consideration the effects on the environment / communities / Thurrock's Strategic Growth Plans. The Council requests that full justification regarding the preferred route selection, which includes outlining a comparison of the environmental effects of each option to reach the decision on the preferred route, is provided in the ES.
25	Chapter 3 The Reasonable Alternatives Considered / General	The Council would like additional information on how the methodology of the sifting process, particularly how the objectives were weighted within the process.
26	Chapter 3 The Reasonable Alternatives Considered / Table 3.1	We note that Option B was discounted due to severance, when the preferred route Option C creates severance throughout the borough of Thurrock.
27	Chapter 3 The Reasonable Alternatives Considered / General	The Council has major concerns over the route selection process and the fact that this was based on out of date traffic data. Further information should be provided by Highways England to document this process.
28	Chapter 4 Consultation / General	Please provide a breakdown of the results of the consultation as part of the EIA document, in particular those from the local community of Thurrock.
29	Chapter 5 EIA Method / General	The Council agrees with the approach to EIA and inclusion of a Habitat Regulations Assessment (HRA).
30	Chapter 5 EIA Method / General	It is a requirement of the new EIA regulations (Infrastructure Planning (Environmental Impact Assessment) Regulations 2017) to assess 'the expected significant effects arising from the vulnerability of the proposed development to major accidents or disasters that are relevant to the development'. Therefore, under these new regulations Highways England should undertake sensitivity testing to assess unusual but not uncommon traffic scenarios due to major accidents, e.g. the closure of both crossings, and the impact this would have on traffic/transport, noise, air quality, people, and communities. This assessment should be presented within the ES, and must recognise the impact of closures to the crossing on the jobs and livelihoods across the borough.
31	Chapter 5 EIA Method / Section 5.2.2	The report mentions opportunities to deliver environmental enhancements, however there is no explicit mention of any enhancements that have been identified. Highways England need to consider and identify opportunities for enhancements throughout the duration of the design process, and include these in the ES. Opportunities should consider (but should not be limited to) enhancements to the existing public rights of way network, in line with Thurrock Rights of Way Improvement Plan (which is currently in draft form), and enhancements to the landscape and air quality. Highways England need to demonstrate through their design principles how the earthworks and subsequent landscaping and planting will provide a new corridor for wildlife, and with it, a new route for non-motorised travel that brings together new and existing rights of way. Aside from direct opportunities through careful scheme design to build in future new connections, the Council also advises Highways England to utilise their Environment and Air Quality Designated Funds to ensure that environmental enhancements are delivered across the widest possible network of rights of way, in order to maximise local opportunities for reduced car travel; at least to the extent that it balances the increase in total traffic mileage generated by the new crossing and the new motorway.
32	Chapter 5 EIA Method / Section 5.5.3	The Council requests that a dedicated chapter be provided to cover the subject of Human Health. This will provide a clearer, more concise assessment of the potential impacts on human health and how these will be mitigated against to reduce such impacts in subsequent EIAs, ES and planning applications. Additionally, the Council strongly request that a separate Health Impact Assessment (HIA) is required and that this is completed in relation to this proposed development to ensure that any negative consequences of the development are identified and mitigated and that opportunities for improving the well-being of the community are maximised. Assessment on human health, and methodology on how this will be done is not made clear in any of the chapters highlighted in 5.5.3.
33	Chapter 5 EIA Method / Section 5.6.1	It is noted that study areas will be individually designed for environmental topic based on the geographical scope of the impacts. It will be important to ensure that the full health impacts for residents living in the 9 Wards in Thurrock closest to the proposed development (Tilbury Riverside and Thurrock Park, Tilbury St Chads, Ockendon, Belhus, Stifford Clays, Little Thurrock Blackshots, East Tilbury, Orsett and Chadwell St Mary) are undertaken. A focus on the Tilbury wards, Ockendon, Chadwell St Mary and Stifford Clays in particular will be vital due to the existing health inequalities that assist in these wards. Wider borough health impacts as a result of the traffic modelling and as such should also be considered.
34	Chapter 5 EIA Method / Section 5.7.4	Future Baseline - Highways England will need to agree this with the Council as there are a number of former minerals sites on or close to the route that are currently being restored. It is important that these are taken into account of as they would then have a higher landscape value once restored.

35	Chapter 5 EIA Method / Section 5.11	The Council agrees that a separate equalities impact assessment needs to be undertaken. This should include information relating to the severance through the borough in terms of ensuring that all residents residing in Thurrock are able to access the same social and economic opportunities across the borough. Health inequalities should be considered as a part of this assessment - there are significant health inequalities across the borough and an assessment should be undertaken to ensure that these will not be further increased. Again a full HIA should be able to support this. It is noted that an EIA is being undertaken and we would request a full HIA.																														
36	Chapter 6 Air Quality / General	This chapter predominantly focuses on exceedances to Air Quality Objectives and EU limits, which whilst important, it does not focus in on the potential impact on health, particularly on identified vulnerable populations, from increases in air pollutants and exceedances as a result of the proposed crossing. In addition annual means are focussed on, but it is known when there are incidents on the existing crossing the local road network is impacted significantly, thereby impacting in the short term on air pollutants. Consideration should be paid to frequency and average number of daily exceedances in an annual period and the impact this might have on vulnerable populations. This supports the point above which states that sensitivity testing should be undertaken for different unusual, but not uncommon traffic scenarios.																														
37	Chapter 6 Air Quality / Section 6.3.2	<p>Section 6.3.2 outlines that baseline monitoring was agreed with Local Authorities for nitrogen dioxide (NO2) and particulate matter (PM10). However the proposed road layout has changed since this consultation was conducted, which has introduced some new potential receptors not considered in the original proposed baseline monitoring. There is now to be an additional road junction in the south of Thurrock linking onto a trunk road which will potentially serve the new proposed Tilbury2 Port facility.</p> <p>In addition to this it may serve as an access road for Heavy Goods Vehicles (HGVs) from the original Port of Tilbury. This will likely generate more traffic along this new access road, where there will be potential residential receptors in close proximity to the new access road in Tilbury itself. (See Figure 1)</p> <p>Figure 1: marked in [Green] (potential new receptors not previously considered in consultation)</p>  <p>We propose that some additional baseline monitoring is setup in these areas by Highways England, in order to establish a more appropriate baseline for use in the detailed dispersion modelling assessment.</p>																														
38	Chapter 6 Air Quality / Section 6.3.2	<p>In addition to the above there is a change in the design of the main junction linking the A13 and A1089 to the new crossing. It is proposed to be a new roundabout junction which links onto the A1013, this also links to the A1089 dock approach road, but in the process will sever the existing A1089 dual carriage way and introduce a pinch point for traffic on this road as they will now have to navigate via the new roundabout junction.</p> <p>This will likely cause queuing at this junction, a lot of this traffic will be from the Tilbury Docks and predominantly HGV's. The A1089 serves as the primary route for all traffic generated by the Port of Tilbury, this roundabout will likely hinder the currently free flowing nature of this dual carriageway.</p> <p>This new junction will also introduce a number of residential receptors which were not considered in the previous design. There are a number of residential properties just off the A1013 along Heath Road which will be close to this roundabout junction. The Council recommend that further baseline monitoring is introduced here as well.</p> <p>Also there are residential properties along Baker Street which lie in close proximity to the proposed junction which have not been included in the baseline monitoring, the Council propose that further baseline monitoring sites should be setup in in key locations along this road also.</p>																														
39	Chapter 6 Air Quality / Section 6.4.3	The Council agrees that the baseline PCM model (2015 base) should be applied to the assessment and not CAZ or CAZ+additional measures scenarios.																														
40	Chapter 6 Air Quality / Section 6.4	<p>The Council have in response to the new proposed road layout set up its own NO2 diffusion tube monitoring sites in key locations as of November 2017. There are a total of five new monitoring locations (see Figure 2). These should be included within Highways England air quality assessment for establishing a baseline and for model verification.</p>  <table border="1" data-bbox="906 1420 1477 1559"> <thead> <tr> <th>Site ID</th> <th>Description</th> <th>site height</th> <th>X ref</th> <th>Y ref</th> </tr> </thead> <tbody> <tr> <td>SCR LTC</td> <td>end of un-named street Off Stifford Clays Road near A13</td> <td>2m</td> <td>562381</td> <td>181155</td> </tr> <tr> <td>BSA LTC</td> <td>Baker Street (A) North of A13</td> <td>2m</td> <td>563481</td> <td>181070</td> </tr> <tr> <td>BSB LTC</td> <td>Baker Street (B) South of A13</td> <td>2m</td> <td>563572</td> <td>180770</td> </tr> <tr> <td>HR LTC</td> <td>Heath Road near A1089</td> <td>2m</td> <td>563782</td> <td>180155</td> </tr> <tr> <td>SR LTC</td> <td>Station Road Between Tilbury & East Tilbury, (near proposed new tilbury junction)</td> <td>2m</td> <td>567349</td> <td>177552</td> </tr> </tbody> </table>	Site ID	Description	site height	X ref	Y ref	SCR LTC	end of un-named street Off Stifford Clays Road near A13	2m	562381	181155	BSA LTC	Baker Street (A) North of A13	2m	563481	181070	BSB LTC	Baker Street (B) South of A13	2m	563572	180770	HR LTC	Heath Road near A1089	2m	563782	180155	SR LTC	Station Road Between Tilbury & East Tilbury, (near proposed new tilbury junction)	2m	567349	177552
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41	Chapter 6 Air Quality / Section 6.6.4	Section 6.6.4 of the report states that PM2.5 is not currently assessed and reported as part of the DMRB HA207/07 and hence will not be included within the assessment for the project. The Council believes that this should also be included as part of the assessment, as it is PM2.5 which is potentially more prejudicial to health than PM10. The evaluation of significance of this pollutant should also be assessed, particularly as it is the very fine elements of particulate matter i.e. PM2.5, such as brake & tyre ware emissions and diesel exhaust emissions that contribute to the bulk of PM2.5 emissions and it is this element which is most prejudicial to health.																														
42	Chapter 6 Air Quality / Section 6.6.4	From a health perspective, 5.6% of premature deaths in Thurrock are attributable to air pollution particulate matter (PM2.5) which is approximately 20% higher than the England average (4.7%). Thurrock have the highest number of deaths attributable to particulate matter when compared with their CIPFA comparators and 2nd highest across the East of England region.																														

43	Chapter 6 Air Quality / Section 6.7.6	Highways England should undertake modelling of the construction vehicles. The number of construction vehicles in each phase/year of construction should be quantified. A good reason for scoping out a simple or detailed construction phase assessment should be included in the EIA when construction vehicle numbers are available. It is considered that an increase in construction vehicles just below the DMRB screening criteria may still lead to long term effects due to the duration (6 years) of construction.
44	Chapter 6 Air Quality / Section 6.7.14	The EIA should confirm that the opening year (currently 2026) is worst case in terms of air quality impacts.
45	Chapter 6 Air Quality / Section 6.7.26	The EIA must include the latest PCM data available at the time of assessment. This paragraph states that the PCM 'model provides predicted concentrations for each link in a number of years at five year intervals.' The latest (August 2017 (as referred to in other places in this scoping report)) PCM data should be applied to the assessment. This data is provided by Defra as yearly concentrations from 2017 and not five year intervals as suggested in paragraph 6.7.37.
46	Chapter 6 Air Quality / Section 6.7.41	Section 6.7.41 of scoping report states that emissions from vehicles in particular diesels, do not perform to their prescribed European standards and limited evidence on Euro 6 emissions. Any modelling using DEFRA's Emission Factor Toolkit V7.0 (EFT 7.0) is likely to underestimate these emissions considerably, as they are known to greatly under-represent real world emissions. A conservative approach should be adopted for this, upscaling of diesel emissions in particular should be undertaken. Air Quality Consultants (AQS) have developed such a conservative approach known as CURED V2A, which better represents diesel emissions than EFT 7.0, something similar should be adopted in this case also.
47	Chapter 6 Air Quality / Section 6.7.47	Section 6.7.47 of the scoping report states It will only consider receptors which exceed the Air Quality Standards / Objectives i.e. (annual mean of 40 µg/m³ for NO2 and PM10) in either the, with or without scenarios are used to inform the evaluation of significance. The Council recommends that any receptor be considered in the evaluation of significance proposed if it has a medium >2 µg/m³ or large >4 µg/m³ magnitude of change. As some of these may be near the objective limit and have a large magnitude of change but fall just below the objective limit. Considering the uncertainties associated with air quality modelling I'd like to see these sites listed as well as those above the objective limits.
48	Chapter 6 Air Quality /Section 6.9	It is assumed that best practice mitigation measures will be applied during the construction phase, this needs to be clarified.
49	Chapter 6 Air Quality / General	Other than the points that have been raised, the proposed methodology for assessment is acceptable. However, the recommendations that have been outlined should be considered as there has been a significant of change in the proposed layout of the new crossing and change in the road junctions, that warrants further consideration before the full EIA and subsequent Air Quality Assessment is undertaken.
50	Chapter 6 Air Quality / General	Highways England should include information or a map outlining where the highest levels of pollutants would occur as a result of the development.
51	Chapter 7 Cultural Heritage / General	A Heritage Statement should be undertaken and reported in compliance with Historic England Good Practice Advice Note 3: The Setting of Heritage Assets 2015.
52	Chapter 7 Cultural Heritage / Section 7.2	There is no consideration of local policy, Highways England needs to take this into consideration in the EIA.
53	Chapter 7 Cultural Heritage / Section 7.3.4	The heritage stakeholders identified should not be consulted in isolation. Any future meetings should, where possible, include all relevant heritage advisors.
54	Chapter 7 Cultural Heritage / Section 7.4.1	The baseline should include any existing (as mentioned in 7.5.1) or emerging Local Heritage Lists which have yet to be adopted.
55	Chapter 7 Cultural Heritage / Section 7.5.1	The baseline should include the rectification of all available aerial photographs with an assessment of images available online such as Google Earth.
56	Chapter 7 Cultural Heritage / Section 7.6	The applicant should outline the proximity of the assets to the scheme.
57	Chapter 7 Cultural Heritage / Section 7.6.7	Tilbury Fort and Coalhouse fort as combined monuments forming defensive structures along the Thames could be viewed as Very High Value. This should be discussed with Historic England.
58	Chapter 7 Cultural Heritage / Section 7.6.7	Consideration should be paid to the value rating of Tilbury Fort as a historic building. As a significant heritage site, access, supporting tourism and celebrating heritage should be considered. Impact of the proposed crossing on views, access and economic viability for the fort and other heritage sites (Coal house fort for instance) should be considered. These sites provide an important sense of community, pride, space for leisure activities, visual and scenic landscapes which all impact on health and well-being.
59	Chapter 7 Cultural Heritage / Section 7.6.7	The list of heritage assets is not exhaustive, for example The Grade II* Riverside Station is not listed, though it is within the search area of Fig.7.1. This list will need to evolve.
60	Chapter 7 Cultural Heritage / Section 7.7.4	It has been recommended that as an initial survey a programme of aerial photographic rectification is undertaken as part of the desk based phase of work. This will then feed into the follow up stages of ground investigation.
61	Chapter 7 Cultural Heritage / Section 7.7.4	The Council would like the analysis of the aerial photography and LIDAR be rectified and mapped, to provide an accurate representation of identified archaeological remains.
62	Chapter 7 Cultural Heritage / Section 7.7.4	Highways England should also be using the Historic Environment Characterisation Work undertaken by Essex County Council for the Thurrock area, and should also look at the work undertaken by Chris Blandford on Characterisation in the Thames Gateway.
63	Chapter 7 Cultural Heritage / Section 7.7.6	Visual inspection of listed buildings and other designated assets should be carried out as part of the desk based assessment, not following results of it.
64	Chapter 7 Cultural Heritage / Section 7.7.6	Is 'Aerial Photogrammetrical Survey' the rectification and mapping of features identified on the aerial photographs and LIDAR? If so this should be done in conjunction with the desk based assessment.
65	Chapter 7 Cultural Heritage / Section 7.7.6	Trial trenching should be used in its own right, not just related to geophysics. For those areas where geophysics cannot be used, a general trial trenching evaluation at 5% should be considered.
66	Chapter 7 Cultural Heritage / Section 7.7.6	Consideration needs to be given in the EIA for the appropriate recording of the scheduled monument (Crop mark complex, Orsett) at the junction with the A13 and A1089 considering the extensive damage that will be caused. Consideration needs to be given to undertaking a total excavation of the scheduled area and associated elements of this nationally important complex.
67	Chapter 7 Cultural Heritage / Section 7.7.6	The Zone of Visual Influence should be defined in conjunction with heritage consultees. This will be in accordance with Historic England's Advice Note 3.
68	Chapter 7 Cultural Heritage / Section 7.7.6	Setting assessments of assets should be carried out at the desk based assessment stage. Note that setting does not solely relate to intervisibility and views but can relate to sound, tranquillity, relationship with the landscape, air quality etc (see Historic England guidance in GPA3).

69	Chapter 7 Cultural Heritage / Section 7.7.8	The Local Authorities, as curators, should be undertaking monitoring visits to all of the sites investigated.
70	Chapter 7 Cultural Heritage / Section 7.7.8	Where possible, the number of separate contractors should be kept to a minimum to ensure consistency of results. A consortium of large contractors has been successful on large scale projects in the past.
71	Chapter 7 Cultural Heritage / Section 7.7.10	There should be consideration to using side scanning sonar for the Thames, or this should be discussed with Wessex Archaeology who probably have already undertaken this for London Gateway.
72	Chapter 7 Cultural Heritage / Section 7.7.11	In addition to Noise/Traffic Impact, the assessment will need to cross over with reports/analysis into associated lighting and potential light pollution, as this also impacts upon Cultural Heritage. This assessment should utilise Thurrock Councils Night Time Skys data/resources.
73	Chapter 7 Cultural Heritage / Section 7.7.12	The Council requests clarification on the methodology for determining where the study area can be refined.
74	Chapter 7 Cultural Heritage / Section 7.7.13	This section states that the zone of visual influence used will be the same as for the landscape assessment. In the landscape chapter the zone of visual influence is defined as a 2km buffer around the application boundary. However, it is stated in Section 7.7.12 that the study area for cultural heritage will be 1km. Clarification is needed in regard to the zone of visual influence study area that will be used in the cultural heritage assessment. The study area for cultural heritage should be extended further than 1km for certain receptors that lie outside the 1km buffer but which may experience visual impacts from the proposed development.
75	Chapter 7 Cultural Heritage / Section 7.7.13	Designated assets outside of the study area requiring assessment should be identified by the applicant and should be agreed with the consultees.
76	Chapter 7 Cultural Heritage / Section 7.7.14	Assessments should always assess 'worst case scenario' for all elements of the proposed development.
77	Chapter 7 Cultural Heritage / Section 7.7.26	The term 'harm' relates to any adverse change in the heritage significance of an asset and should not be categorised simply into a large adverse effect. Substantial harm is a more nuanced categorisation of a change in significance which is separate to the DMRB significance of effect terminology. Under the methodology in the scoping report only a high or very high value asset could be subject to substantial harm, whereas substantial harm could be subjected to any heritage asset, regardless of value. For instance, demolition of a grade II listed building would certainly constitute substantial harm.
78	Chapter 7 Cultural Heritage / Section 7.7.26	It would be more appropriate to discuss the terms of harm with all of the specialist heritage advisors not just Historic England.
79	Chapter 7 Cultural Heritage / Section 7.8.1	No impact on archaeological remains has ever been shown through ground movements associated with the tunnel boring machine. Also it is not vibrations from the tunnel boring machine, but ground settlement following the tunnelling which can effect historic structures.
80	Chapter 7 Cultural Heritage / Section 7.8.3	In relation to changes in groundwater level, the impact on the grazing marsh area and the potential heritage assets it contains will need to be assessed.
81	Chapter 7 Cultural Heritage / Section 7.8.5	This section notes that there may be some beneficial impacts to conservation areas and listed buildings outside of the study area through the amelioration of the deteriorating effects of traffic pollution. These effects should not be considered if they lie outside of the study area. If these effects are to be considered, then the study area needs to be widened and any other adverse effects within the study area would also need to be reported.
82	Chapter 7 Cultural Heritage / Section 7.9	Mitigation should include measures set out in the CEMP/COCP to ensure best practice construction methodologies and ensure accidental damage to heritage assets is avoided.
83	Chapter 8 Landscape / Section 8.2.1	The landscape and visual impact assessment should have regard to the new (currently draft) Landscape Character Assessment for Thurrock (a timetable for its completion should be agreed by end of November 2017). In addition, consideration should also be given to the Land of the Fanns Landscape Character Assessment which covers a large proportion of the affected landscape north of the Thames. The Land of the Fanns is an heritage lottery funded Landscape Partnership scheme which should be considered as part of any landscape, ecology and cultural heritage assessment.
84	Chapter 8 Landscape / Section 8.2.1	This section suggests that the text in italics is taken directly from the NPSNN as it appears in italics within speech marks, however, the bullet points are not a full representation of that provided within paragraphs 5.151-5.155 of the NPSNN. In addition to this, it is noted that sentences that may not align with the scheme vision are actually left out altogether. This appears misleading and a misrepresentation of the NPSNN.
85	Chapter 8 Landscape / Section 8.2.6	No mention is made of the relative tranquillity of the upper Mardyke Valley where there are few dwellings and no street lights. This area should also be assessed for the combined effects of noise and visual intrusion in the same way as the Thames Estuary.
86	Chapter 8 Landscape / Section 8.2.14	Highways England needs to demonstrate where off-site mitigation may be required as this will need to be included in the EIA and DCO.
87	Chapter 8 Landscape / Section 8.4	Natural England's proposed England Coast Path needs to be considered in the assessment. This path is planned to go through Tilbury and will be an important leisure trail from the Thames Nature Reserve at Mucking through to the Coalhouse Fort and onto Tilbury Fort, and the ferry crossing to Gravesend. Natural England will need to be consulted on this. Other future projects include Land of the Fanns (a Thames chase and LA partnership) the project has been awarded 2.4 million from Heritage Lottery funding for a 5 year programme of activity to restore and promote landscapes within Essex. Strategic work is already underway and some of the projects will be affected by the LTC. The report does not give consideration to this significant project.
88	Chapter 8 Landscape / Section 8.4.4	Reference is made to the Saxon Shore Way - this is only on the Kent side of the river. The reference should be Thames Estuary Path (including the Two Forts Way). Grangewaters is a recreation site close to the proposed route so should be included on the list of recreation/sports sites.
89	Chapter 8 Landscape / Section 8.5	The Council will need to agree any proposed viewpoint receptors in advance of the landscape and visual impact assessment commencing. These will need to ensure that all settlements are assessed, as well as sites used for public recreation, cultural heritage assets and public rights of way and existing transport routes. Long views will also need to be assessed e.g. from Thorndon Park in Brentwood. Some future baseline viewpoints will also need to be considered.
90	Chapter 8 Landscape / Section 8.5.1	Reference to Identifying tree protection orders - clearly this does not remove the need to undertake a proper arboricultural assessment as not all good quality trees are covered by a tree protection order e.g. they are not placed on council owned trees or on trees where there is no perceived threat.
91	Chapter 8 Landscape / Table 6.2	Reference is made to the Local Character Areas defined in the current Landscape Capacity Study. The list should follow the new Landscape Character Areas which should be finalised soon.
92	Chapter 8 Landscape / Section 8.7	No methodology has been outlined for the production of photomontages. These should be produced for year 1 and year 15. There is also no mention of the methodology for production of the zone of visual influence. The Council would like clarification on whether this will be done using ground modelling software etc.
93	Chapter 8 Landscape / Section 8.7	Photomontages should be undertaken for the key views of the route, e.g. the proposed tunnel, A13 and Tilbury junctions, and where the route crosses through the Mardyke Valley.

94	Chapter 8 Landscape / Section 8.7.3	It is not clear whether the night time impacts will simply be informed and presented in line with the Lighting assessment undertaken in accordance with the Institute of Lighting Professionals Guidelines or whether it will be assessed from a landscape and visual impact assessment perspective. The lighting assessment does not consider the sensitivity and change in view in the same way as a landscape and visual impact assessment should. The lighting assessment simply looks at changes in lighting levels, not whether a series of lights will now be visible against an otherwise dark landscape etc/ take into account existing views, sensitivity to change of a landscape/view and the likely magnitude of change etc. Highways England needs to demonstrate that the night time impacts will be fully assessed in the landscape and visual impact assessment.
95	Chapter 8 Landscape / Section 8.7.3	Highways England has not made it clear whether tranquillity would be assessed for each character area. It does not appear to be mentioned. Only that tranquillity will be assessed on recreational receptors within AONB and on cycle routes and LDF. Tranquillity needs to relate to character and be assessed for all landscape character areas within study area.
96	Chapter 8 Landscape / Section 8.7.8	No justification/explanation is given to the decision to adopt a 2km Zone of Visual Influence. This should follow standard best practice and identify a zone of visual influence which is likely to be much larger. This is particularly important for the land to the north, which is much more open. It is likely that the route (which is likely to be elevated through this area) would be very prominent from a long distance e.g. from Thorndon Country Park in Brentwood.
97	Chapter 8 Landscape / Section 8.7.11	As stated previously it is important for Highways England to take into account approved restoration schemes in the locality.
98	Chapter 8 Landscape / Section 8.7.18	Significance should be shown as a matrix rather than a description for clarity.
99	Chapter 8 Landscape / Section 8.9	The Council would like to restate the importance of avoiding harm rather than mitigating it. Highways England need to demonstrate that design options have been considered that will reduce the landscape and visual harm being caused.
100	Chapter 8 Landscape / Section 8.9.2	Mitigation measures should also include opportunities to restore/recreate historic landscape features such as marsh and fen which would link to biodiversity and water management mitigation. Green bridges will be important for public rights of way and biodiversity mitigation and the Council would like to see several provided.
101	Chapter 8 Landscape / Section 8.10.1	The Council agrees that there is no landscape and visual impact assessment aspects than can be scoped out.
102	Chapter 8 Landscape / Figure 8.1	Grangewaters Outdoor Pursuits Centre needs to be included. The Thames Chase is shown as the Visitor Centre only, it needs to include the whole designated boundary. This figure also shows the limited zone of visual influence study boundary. This should be based on an appropriate zone of theoretical visibility with obscured viewpoints scoped out. The present approach is not considered acceptable as the boundary is arbitrary and not based on a sound justification.
103	Chapter 8 Landscape / Figure 8.1	The drawing title suggests that visual receptors are shown but none are actually identified, these need to be identified and included.
104	Chapter 8 Landscape / Figure 8.2	Landscape Character Areas need to be agreed with the Council.
105	Chapter 8 Landscape / Figure 8.2	The figure would benefit from references other than just colour from Gravesham Landscape Character Area as it is not clear.
106	Chapter 9 Biodiversity / Section 9.2.8	Ecological corridors/networks should also have regard to the landscape character and seek to restore/enhance landscape features.
107	Chapter 9 Biodiversity / Table 9.1 and Section 9.7.8	Table 9.1 and Appendix C States that Extended phase 1 habitat survey (botanical) of application boundary + 50m buffer. Paragraph 9.7.8 states the extended Phase 1 survey covers the application boundary plus a 500m buffer. This needs to be clarified and consistent. A 500m buffer would be expected to be used for Extended phase 1, which will increase for some protected species.
108	Chapter 9 Biodiversity / Table 9.1	The report details a comprehensive list of protected species that are being surveyed. However, there is no mention of barn owls. Barn owls should be considered and surveys undertaken (if required), as barn owls have the potential to be impacted within a buffer zone of up to 1.5km from new roads.
109	Chapter 9 Biodiversity / Table 9.1	Bat emergence and activity surveys need to ensure Hangman's Wood and Deneholes SSSI is included as this is designated for its bat roost.
110	Chapter 9 Biodiversity / Table 9.1	Invertebrates - The Council agrees that surveys of Thames Terrace Grasslands and Ancient woodland are important but should also consider any brownfield. Open Mosaic Habitat sites such as Blackshots Nature Park Local Wildlife Site which are designated in part due to their value for invertebrates. OMH is also a s41 HPIE.
111	Chapter 9 Biodiversity / Section 9.5.4	The project construction is over a 6 year period and there is no suggestion of a long-term fish monitoring project. The Council requests a confirmation that the Environment Agency are conducting this monitoring.
112	Chapter 9 Biodiversity / Section 9.5.4	There is no mention of water quality surveys to be conducted during construction. Confirmation needs to be provided as to whether this will be covered in the proposed survey mentioned in Table 9-2- Collection and analysis of sediments and contaminant samples.
113	Chapter 9 Biodiversity / Table 9.5	The boundaries of the Local Wildlife Sites around Tilbury Power Station and Goshems Farm have been amended as a result of the Local Wildlife Site Review carried out in 2016 but which is still in draft (nearly finalised). Highways England need to work to the revised boundaries as they make more sense on the ground following recent restoration works at Goshems Farm.
114	Chapter 9 Biodiversity / Section 9.7	The Council agree with guidance referenced.
115	Chapter 9 Biodiversity / Table 9.6	The Council agrees with the comparison of sources for determining valuation/importance.
116	Chapter 9 Biodiversity / Section 9.7.12	It is important that any surveys take into account the ways animals move through the area and what effects the new route would have. The Council would like to see whether consideration has been given to whether the Scheme would form a barrier to commuting bats and how these effects can be mitigated.
117	Chapter 9 Biodiversity / Section 9.7.15	Future baseline needs to take into account sites where restoration works should be completed during this period and where restoration is for biodiversity. The Council agrees that while much of area is arable some sites around Goshems Farm and East Tilbury will change during this period.
118	Chapter 9 Biodiversity / Section 9.7.19	The CIEEM guidelines are proposed to be used to determine significant effects. Significance criteria has been based on CIEEM guidelines only, which are used for ecological assessment of non-infrastructure projects in the UK. However, this isn't consistent with other disciplines included within the assessment. As the project is an infrastructure project, the assessment should describe the impacts and significance in accordance with DMRB, where effects of Moderate Adverse or Beneficial and above are considered to be significant. The CIEEM guidelines do not translate this across in a way which is consistent with other topics. Although the CIEEM guidelines should be referred to (as they are the recognised standard for EclA in the UK), the conclusion to the assessment should also use the terminology outlined within the DMRB to ensure language/consistency is maintained throughout the assessment.
119	Chapter 9 Biodiversity / Section 9.7.20	Highways England needs to consider increase of plastics into the marine environment during construction.
120	Chapter 9 Biodiversity / Section 9.8.25	This section only takes into consideration the potential impacts to the qualifying features of the recommended Marine Conservation Zone during construction, which are acknowledged in table 9-10. Implications to other species of conservation importance, i.e. marine mammals, are not listed, although are acknowledged in the text in section 9.8.24. The EIA will need to take into consideration all species of conservation importance.

121	Chapter 9 Biodiversity / Section 9.8.30	Retention of the jetty could also provide substrate for subtidal communities (shellfish, fish species etc.). Possible negative implications of the jetty, re. invasive species habitat, as well as its construction should be covered in the hydrographic modelling. As part of any mitigation procedures, additional opportunities for ecological enhancement within the Projects zone of influence that will enhance the designated sites identified features and support biodiversity and ecosystem services, especially in connection with the marine environment intertidal and subtidal especially, should be identified and implemented.
122	Chapter 9 Biodiversity / Section 9.9.1	Marine mammal mitigation for underwater noise emission during any piling or dredging needs to be identified.
123	Chapter 9 Biodiversity / Section 9.10	The Council agree that no topics are to be scoped out of the EIA assessment.
124	Chapter 9 Biodiversity / General	In general the Biodiversity section has been prepared following consultations with statutory agencies responsible for nature conservation as well as national and local conservation NGOs. The survey methodology is therefore considered generally appropriate. The key points however is to consider sufficient weight is given to the potential severance of ecological corridors for species such as bats. Also 'temporary disturbance during construction' is for a period of 6 years.
125	Chapter 9 Biodiversity / General	As a general point, access to nature and the impact this can have on human health could also be considered. Access via PRoWs offer opportunity for people to have closer access to nature. This should be assessed in a standalone health impact assessment.
126	Chapter 9 Biodiversity / Appendix C Survey Methodology	Highways England need to demonstrate that they have considered hedgerow surveys to determine if they are important under the Hedgerow Regs. 1997. There is no mention of this survey type specifically.
127	Chapter 9 Biodiversity / Appendix C Survey Methodology	Highways England need to evidence that consideration has been given to crossing point surveys and landscape scale transects being as part of the survey methodology, with reference to methods outlined in Berthinussen & Altringham (2015).
128	Chapter 9 Biodiversity / Appendix C Survey Methodology	Bat surveys have been proposed to continue 2 hrs after sunset. Natural England advise that transect and emergence/re-entry surveys are extended to 3 hours after sunset to account for late-emerging bat species, such as Horseshoes, if they are likely to be present. Highways England should consider extending survey requirements.
129	Chapter 9 Biodiversity / Appendix C Survey Methodology	The methodology for the reptile surveys only proposes 7 surveys. This will only give presence/absence data. Highways England need to demonstrate that consideration been given to understanding population i.e. undertaking 20 surveys or more over a season to establish this.
130	Chapter 9 Biodiversity / Figure 9.1	Local Wildlife Site boundaries around Tilbury Power Station/ Goshems have been amended. This needs to be considered within the EIA.
131	Chapter 9 Biodiversity / Figure 9.3	The Priority Habitats don't accord with what is on the ground, though they are of use as a reference.
132	Chapter 10 Geology and Soils / Section 10.1.3	Geological designations and SSSIs etc. covered in biodiversity and ecological conservation chapter, but not in the geology and soils assessment. These should be included within the geology and soils assessment for completeness.
133	Chapter 10 Geology and Soils / Section 10.1.4	The interrelationship with the materials assessment needs to be considered.
134	Chapter 10 Geology and Soils / Section 10.4	Any designated sites with direct or indirect geological value should be considered (e.g. if none designated for geological value, those with habitats dependent on underlying geology/groundwater quality etc).
135	Chapter 10 Geology and Soils / Section 10.4.43-10.4.52	The assessment needs to take into consideration the potential margin for error in landfill locations. Not all historic records are accurate and landfill extents can vary and presence can sometimes be unmarked.
136	Chapter 10 Geology and Soils / Section 10.4.68-10.4.72	Highways England need to evidence where the agricultural land information has been collected from. The Council would like to know whether this is based on MAFF (1975) data, post 1988 ALC data or ALC survey data.
137	Chapter 10 Geology and Soils / Section 10.4.73 and 10.4.74	Highways England need to identify the potential number of individual farms present.
138	Chapter 10 Geology and Soils / Section 10.6	Key environmental receptors have been identified but value has not been assigned. It would be useful to separate geological resources (superficial/bedrock deposits of resource value) from soil resources (ALC etc). Highways England also need to consider designated sites dependent on geological conditions/with geological value in this list.
139	Chapter 10 Geology and Soils / Section 10.7.4	A wider area for controlled water impacts should be considered.
140	Chapter 10 Geology and Soils / Table 10.6	Geological site importance is discussed in this table (and also in Table 10.7) but previously it has been stated that this is covered in biodiversity chapter. This should be included within the geology assessment. Very High would normally count as international importance (World Heritage Sites etc) with High being National. It is also recommended that built environment receptors (concrete structures, buried pipes etc) should be included, including a description for geological resource value.
141	Chapter 10 Geology and Soils / Table 10.7	The definition for magnitude of impacts on superficial/bedrock geological resources (e.g. potential for sterilisation) and for generation of excess quantities of geological materials for re-use elsewhere (tie-in with materials chapter) should be included. Controlled water quality impacts should also be quantified e.g. changes with regard to Drinking Water Standards (DWS)/Environmental Quality Standards (EQS).
142	Chapter 10 Geology and Soils / Table 10.9	The Council believes that the quantity of land owned by a farm is also an important consideration. For example, a farm with a greater area of land is likely to be able have a greater degree of diversification, i.e. Crop/ livestock types, whilst a farm with a smaller area of land will have less flexibility.
143	Chapter 10 Geology and Soils / Table 10.10 and Table 10.11	The magnitude of impact should be major, moderate, minor (adverse or beneficial), negligible or no change as per DMRB Volume 11 Section 2 Part 5. For Table 10.10, this should also consider severance impacts and changes to drainage.
144	Chapter 10 Geology and Soils / Section 10.8	Impacts relating to the generation of excess geological materials should be included (and tied in with the materials chapter).
145	Chapter 10 Geology and Soils / Section 10.8.5	Effects also include the necessity for dewatering and requirement to manage potentially significant quantities of contaminated groundwaters, and the generation of significant quantities of potentially hazardous waste/soils requiring treatment. These effects need to be considered in the EIA.
146	Chapter 10 Geology and Soils / Section 10.8.6	A Foundation Works Risk Assessment may be required in areas of piling/other foundations works in accordance with Environment Agency guidance to determine the potential likely effects relating to the driving of piles through any contaminated Made Ground/landfilled materials and into the underlying Aquifers, and to identify what mitigation measures will be appropriate for the site.
147	Chapter 10 Geology and Soils / Section 10.8.11	This section highlights significant contamination of ground with the potential for migration of land gases from these contaminated areas during construction. The report mentions mitigation measures to prevent this, but the Council believes this should be more enhanced to include emergency measures for local residents in the event of failed mitigation leading to significant risk to public health. Impacts to human health need to be fully assessed within a standalone health impact assessment.
148	Chapter 10 Geology and Soils / Section 10.9.1	A Contaminated Land Risk Assessment and Detailed Quantitative Risk Assessment are required.

149	Chapter 10 Geology and Soils / Section 10.9.7	A Soil Management Plan should also be included as part of the Construction Environmental Management Plan (CEMP) (separate from the Materials Management Plan).
150	Chapter 10 Geology and Soils / General	The Council is satisfied that the proposals within the chapter are adequate to address the potential impact of the development with regard to potentially contaminated land as long as the measures outlined in Section 10.9 are implemented. Particular regard should be given to the potential contamination at the former Goshems Farm landfill (THU0048), the ground investigation will need to fully determine the level of contamination present here.
151	Chapter 11 Materials / General	Highways England needs to demonstrate a clear understanding of the potential effects for Thurrock. Potential effects include increased minerals extraction e.g. opening new quarries or extending the life of existing operations with associated visual and ecological effects, as well as storage and disposal of material arising from tunnelling and wider construction, which could provide threats or opportunities in terms of land raising or restoring poor quality former landfill sites. Additionally, there is an issue of wider storage of materials during construction e.g. maximum heights or areas of pallets etc to reduce visual effects.
152	Chapter 11 Materials / Section 11.3.3	The consultation focuses on waste, the Council would like to see a plan to consult on material availability, such as aggregate.
153	Chapter 11 Materials / Section 11.7	No methodology has been outlined. The methodology needs to be fully defined to ensure full understanding on how the conclusion regarding effects will be reached.
154	Chapter 11 Materials / Section 11.9	Although mentioned in section 11.2.7, the use of a SWMP, MMP and CTMP has not been specified in the mitigation section.
155	Chapter 12 Noise and Vibration / Overview	The Noise and Vibration Section has been produced in a normal scoping report format and scopes in all the matters relevant to Noise and Vibration for a project of this scale and extent. In general the Council is satisfied that all relevant noise and vibration matters have been included and the proposed standards and methodologies are acceptable. If the Council has any concerns, comments or requests to make relating to specific paragraphs these will be shown below. The remaining paragraphs are accepted.
156	Chapter 12 Noise and Vibration / Section 12.2	There is other over-arching legislation e.g. National Planning Policy Framework which should be referred to and referenced.
157	Chapter 12 Noise and Vibration / Section 12.2.6	An explanation of Noise Important Areas should be included. Clarification as to what they mean and how they are defined should be included.
158	Chapter 12 Noise and Vibration / Section 12.3.2	Local authorities should be consulted (not 'as appropriate').
159	Chapter 12 Noise and Vibration / Section 12.4.5	The proposed noise survey locations need to be agreed with the Council. In particular, the Council would like to see a long-term monitor in Baker Street closest to the proposed southbound new road to A13 eastbound slip road.
160	Chapter 12 Noise and Vibration / Section 12.4.6	Noise Action Plans and Noise Important Areas. There are a number of Noise Important Areas that may be affected by the operational noise from the project directly or indirectly where traffic flows on local roads are perturbed. These NIAs fall within the responsibility of Highways England and the Thurrock Council Highways Authority.
161	Chapter 12 Noise and Vibration / Section 12.5.4	The Indicative noise monitoring locations in Figure 12.1 in Appendix F are generally in satisfactory positions. There are potentially some additional locations. In particular, the Council would like to see a long-term monitor in Baker Street that will be closest to the proposed southbound road to A13 eastbound slip. Further monitoring may also be necessary in the south of Tilbury where the link could be preferentially used by the existing Tilbury port traffic rather than the A1089 dock access road.
162	Chapter 12 Noise and Vibration / Section 12.6.3	The study area should be clearly defined by DMRB and not subject to development.
163	Chapter 12 Noise and Vibration / Section 12.6.5	The proposed Receptor Importance/Sensitivity criteria designations in Table 12-1 are acceptable. However, aligning sensitivity to receptors should be more than just professional judgement, references should be made to IEMA guidelines and DMRB Assessment of Environmental Effects.
164	Chapter 12 Noise and Vibration / Section 12.6.8	The LOAEL and SOAEL levels assumed for operational road traffic noise in Table 12-2 are acceptable. It is assumed that LAeq levels are free-field and LA10 levels include a façade reflection component. It is assumed that the day is 16 hours 07:00 to 23:00, night is 8 hours 23:00 to 07:00 and LA10 is 18 hours 06:00 to 00:00. This should be confirmed with the Council.
165	Chapter 12 Noise and Vibration / Section 12.6.9	The LOAEL and SOAEL levels assumed for construction noise in Table 12-2 are reasonable. Clarification of the LAeq,T period will be needed. Thurrock Section 61 consents typically have upper noise limit levels with T as 1 hour for more sensitive times of the day and the whole night time period. Weekdays T is 10 hours 08:00 to 18:00 and Saturday T is 5 hours 08:00 to 13:00.
166	Chapter 12 Noise and Vibration / Section 12.7.2	What are the proposed vibration LOAEL and SOAEL level values for construction? Are these to be taken from BS5228-2 +A1:2014? (ref. to paragraph 12.7.18)? This needs to be clarified in the EIA.
167	Chapter 12 Noise and Vibration / Section 12.7.4	The reason for limiting the construction study area to 300m need to be clarified, including the guidance referred to for this. In addition, haul routes need to be considered.
168	Chapter 12 Noise and Vibration / Section 12.7.13	The Council would like to see how the noise impacts from the tunnel ventilation systems will be calculated and assessed.
169	Chapter 12 Noise and Vibration / Section 12.7.20	This is not consistent with other approaches set out, e.g. traffic noise.
170	Chapter 12 Noise and Vibration / Section 12.7.20	It would be useful to have an understanding of what this criteria is, which has been used on other major tunnelling projects, and any potential impacts this would have on local resident's health.
171	Chapter 12 Noise and Vibration / Section 12.7.21	While the noise prediction models proposed are acceptable, Thurrock does not have a proprietary noise model and the Council would like access to the link-level input data used so that individual receptor location levels may be verified using a CRTN spreadsheet program.
172	Chapter 12 Noise and Vibration / Section 12.7.25	While the noise prediction models proposed are acceptable, Thurrock does not have a proprietary noise model and the Council would like access to the plant sound power (or SPL @distance) input data used so that individual receptor location levels may be verified if necessary using a ISO 9613-2:1996 propagation method spreadsheet program.
173	Chapter 12 Noise and Vibration / Section 12.7.23	Highway England needs to demonstrate the rationale for not looking at the short term noise impacts. Consideration needs to be paid to the role that noise can play in relation to individual's sleep. A good night's sleep is beneficial for health, as it increases concentration, mood and wellbeing.
174	Chapter 12 Noise and Vibration / Section 12.8.4	Consideration will need to be paid to implementing appropriate mitigation measures to reduce the impact of noise on local residents in Thurrock. Measures will need to minimise residents experiencing sleep disturbance, as this could affect their mental health and wellbeing.
175	Chapter 12 Noise and Vibration / Section 12.9.2	The construction works will require a CEMP that will include construction work noise. A Control of Pollution Act 1974 Section 61 Prior Consent should also be sought from the Council. This is not mandatory, but Highways England usually require contractors to apply for a S61 for major road construction projects.

176	Chapter 12 Noise and Vibration / Section 12.9.5	The Council understood that all new Highways England projects and resurfaced carriageways would have a low-noise road surface as standard. The Council would like an explanation as to whether this is now not the case.
177	Chapter 12 Noise and Vibration / Section 12.10	Ground borne vibration from road traffic is unlikely to cause issues and the Council agrees that this may be scoped out of the EIA.
179	Chapter 13 People and Communities / Section 13.1.3	The Council questions whether changes in traveller views and driver stress are relevant to NMUs, and equally whether changes in amenity are relevant for vehicle travellers.
180	Chapter 13 People and Communities / Section 13.1.3	The local and wider economy should be expanded to include opportunities and threats to local economy. Increased accessibility could improve the attractiveness of locations in Thurrock for new and existing business and could enable these to be by-passed for other locations.
181	Chapter 13 People and Communities / Section 13.2.8	The NPSNN expects applicants, where possible, to improve access on and around the networks - "applicants are advised to seek to deliver improvements that reduce community severance and improve accessibility". It is not clear at this stage how these improvements will be achieved and this should be scoped into the EIA.
182	Chapter 13 People and Communities / Section 13.3	There is no mention of consultation with a wide range of community and business groups, businesses and residents, amenity groups etc. Highways England need to demonstrate that this will be undertaken and the outcomes of the consultation.
183	Chapter 13 People and Communities / Section 13.3.2	Consultation with the Council will need to continue.
184	Chapter 13 People and Communities / Section 13.3.2	This section refers to 'identified facilities', but there are many that are not referred to here. The red line now includes Coalhouse Fort, a scheduled Ancient Monument that the council manages for conservation and leisure, which has not been included. There also needs to be a cross reference to wider consultation
185	Chapter 13 People and Communities / Section 13.3.2	The key emergency services (East of England Ambulance Service NHS Trust, Essex Police, Essex County Fire and Rescue Service and the relevant local Acute Hospital Trusts with A&E facilities) should be consulted on this proposed new crossing, as a future potential increase in incidents and accidents will have a direct impact on their capacity to respond.
186	Chapter 13 People and Communities / Section 13.3.14	As outlined previously, the use of green tunnels/underpasses and bridges to replace any PRoWs permanently affected by the development would be beneficial in creating visually pleasing environments as well as the potential to reduce some of the impacts of air pollution. Consideration should be paid to how the local walking and cycling infrastructure will be significantly enhanced to cross the borough to mitigate congestion/air pollution/severance across the area.
187	Chapter 13 People and Communities / Section 13.4.13	Coalhouse Fort needs to be included.
188	Chapter 13 People and Communities / Section 13.4.19-13.4.22	This Scoping Report does not acknowledge all of the concerns Thurrock faces in terms of health and wellbeing which could be further impacted by the proposed crossing. In particular the variation across the borough in terms of lower life expectancy, higher cancer rates, higher mortality due to cardiovascular disease and respiratory illness, deprivation levels etc. Please see additional information provided in support of a Health Impact Assessment. There are 3 traveller sites in Thurrock and the Gammon Field site at Long Lane (22 plots) which will need to be relocated. The travellers affected have already been informed but the report does not consider the impact this will have on the health and wellbeing of this community. Gypsies and Travellers experience some of the poorest health outcomes including the lowest life expectancy of any group in the UK and high infant mortality rates. The travellers affected have already expressed concerns over the distance they will be relocated and subsequent disruption to their lives and community, in particular possible changes to healthcare providers and children's schools. The report does not mention re-location options or how this community will be supported during this time.
189	Chapter 13 People and Communities / Section 13.4.25	Consideration of other routes, i.e. footways, crossings, long distance footpaths, national trails etc. is required.
190	Chapter 13 People and Communities / Section 13.4.25	The Natural England proposed English Coastal Path (from Tilbury to Southend) also needs to be considered in the EIA.
191	Chapter 13 People and Communities / Section 13.4 and 13.5	Highways England has not provided any baseline information for existing amenity. The Council would like to see a confirmation of any designated crossings/ bridges or underpasses for NMUs.
192	Chapter 13 People and Communities / Section 13.4 and 13.5	The baseline needs to include more detail on the settlements that are likely to be directly affected by the scheme, including reference to the travellers community that is located on the proposed route.
193	Chapter 13 People and Communities / Section 13.4 and 13.5	Highways England need to provide more details on the development sites in the area which will be considered in the assessment (for example a table listing them).
194	Chapter 13 People and Communities / Section 13.4 and 13.5	Baseline information on existing severance needs to be identified and included in the assessment. Given the level of detail on other topics, this feels like a significant omission.
195	Chapter 13 People and Communities / Section 13.4 and 13.5	Statistics in the local and wider economy baseline section should be provided to support the text.
196	Chapter 13 People and Communities / Section 13.5.1	The Scoping Report has not made it clear whether NMu surveys will be undertaken. If there would be permanent modifications to NMu facilities, with the potential for significant effects, these should be undertaken.
197	Chapter 13 People and Communities / Section 13.6.3 and 13.6.4	Highways England need to demonstrate the value of these receptors (i.e. NMUs and vehicle travellers), NMUs are likely to be highly sensitive to change.
198	Chapter 13 People and Communities / Section 13.7	The Council would like greater clarification on what engagement will be carried out with representatives of the community assets that will be affected by severance or demolition, and key interest groups such as those interested in cycling and walking in the local area affected by the severance of the PRoWs, in order to gain local knowledge on the effects on impacted assets.
199	Chapter 13 People and Communities / Section 13.7.4	This section refers to the impact on Community and Private Assets caused by demolition and land take, however the severance of catchment areas could also have a significant impact particularly in the short to medium term on a variety of such interests, and therefore needs to be considered in the assessment.
200	Chapter 13 People and Communities / Section 13.7.4	Community and Private Assets: Highways England need to clarify what assessment will be done in the local impact and wider impact areas, this needs to include reference to the relevant parts of DMRB Vol 11 Section 3 Part 6 and how the method will comply with the guidance.
201	Chapter 13 People and Communities / Section 13.7.7	The methodology for assessing impact on health and wellbeing is not acceptable - a full Health Impact Assessment should be undertaken with recommended best practice methodology (e.g. HUDU), Thurrock Council Public Health and Public Health England should be consulted on the methods for full Health Impact Assessment.

202	Chapter 13 People and Communities / Section 13.7.8	Refers to an assessment of impact on development land being based on planning applications and development plans. The assessment should consider the strategic planning sites set out in the new Local Plan. The Council also has regeneration strategies which promote growth in locations and have been the basis for generating funding from other sources for implementation, these should also be included in scope of the assessment. The assessment also needs to recognise that the scheme could improve the attractiveness of some development land and reduce the attractiveness others impacted by noise, reduced site areas etc.
203	Chapter 13 People and Communities / Section 13.7.8	Development Land: Highways England needs to clarify what assessment will be done on the effects on development land (not just identifying what development land is in the area). Greater clarity is also required on whether the focus will be on land taken, on accessibility or other factors.
204	Chapter 13 People and Communities / Section 13.7.9	Local and wider economy: detailed modelling of the wider economic impacts was published for the appraisal of the shortlisted options. The Council would like greater clarification on whether the method used to assess economic impacts in the EIA will build on this.
205	Chapter 13 People and Communities / Section 13.7.10	Changes to Journey Length and Severance: The method steps could be set out more clearly. Existing journey lengths will need to be identified by mapping routes to key community facilities, and the changes to the journey lengths assessed. The scoping report states "The methodology to identify existing non-motorised traffic will be agreed with local authorities". The Council recommends that traffic counts are carried out at the site of PROWs, using video monitoring at set times to identify the traffic at these routes. The data should then be used to identify the number of people affected by the changing journey length. This needs to be carried out in line DMRB Vol 11 Section 3 Part 8 by relevant transport planning specialists.
206	Chapter 13 People and Communities / Section 13.7.11	The Council would like greater clarification on whether NMU surveys are going to be undertaken. DMRB Volume 11 Section 3 Part 8 Chapter 9 states that 'counts of pedestrians and others should be undertaken where this is necessary to achieve the objective of this stage of assessment' i.e. where there are going to be permanent changes to journey times, and safety and amenity is likely to be prejudiced. Furthermore, where 'pedestrians and others' travel patterns are complex and a scheme could have a major impact, origin destination surveys should be considered'.
207	Chapter 13 People and Communities / Section 13.7.14 and 13.7.15	The table references are incorrect. Highways England need to clarify whether Table 13-5 and Table 13.6 are still in the assessment. It isn't clear what the scale of impacts will be for changes in journey length or amenity or what the methodologies are based on, without the tables.
208	Chapter 13 People and Communities / Section 13.7.15	Highways England needs to consider what changes in barriers between people and traffic will occur. In addition, the EIA should at least include a reference to forecast traffic flows (DMRB Volume 11 Section 3 Part 8 Chapter 4) for routes.
209	Chapter 13 People and Communities / Section 13.7.15	The Scoping Report refers to changes to amenity in terms of impact on pleasantness of the journey and driver exposure to fumes etc. Amenity of people living and working in the area and using established leisure facilities such as parks and PROWS should also be considered in the assessment.
210	Chapter 13 People and Communities / Section 13.7.21	Highways England need to provide justification for the 200m local study area. It is generally accepted that 250m is the appropriate study area for the majority of people and community effects. Additionally, the Local Study Area needs to be more flexible. Some impacts could be outside of this zone such as severance of catchment areas for community and private assets, changed traffic flows etc.
211	Chapter 13 People and Communities / Section 13.7.22	Highways England need to clarify what the study area will be for effects on driver stress.
212	Chapter 13 People and Communities / Section 13.7.28	The approach to determining the level of significance should have been set in the scoping report. There are tables referred to earlier in the method. However, they appear to have been removed from the report, this needs to be clearly set out in the EIA.
213	Chapter 13 People and Communities / Section 13.8.3	There doesn't appear to be a section 1.14 however it states "As outlined in section 1.14 of this EIA Scoping Report". More detail on the impacts on properties and community assets needs to be provided.
214	Chapter 13 People and Communities / Section 13.8.14	Highways England need to provide detail on whether all PROWs will be mitigated by a footbridge or underpass and if they will be provided at appropriate locations as determined by NMU Surveys. The mitigation for PROWs is not clear and needs to be clarified. The use of green bridges and underpasses to replace any PROWs that are permanently affected by the development would be beneficial.
215	Chapter 13 People and Communities / Section 13.8.15	Highways England need to give greater consideration to the severance of the community in regard to the crossing severing links across the community and essentially creating two sets of communities that work in isolation from each other.
216	Chapter 13 People and Communities / Section 13.9	The mitigation proposals for NMUs are not clear. Highways England need to clarify whether permanent diversions or crossing will be provided for NMUs.
217	Chapter 13 People and Communities / Section 13.9	The proposed development should also include enhancements for the existing public rights of way networks, which should take into consideration Thurrock's Rights of Way Improvement Plan (which is currently in draft form), particularly it's aims to increase east to west connectivity for equestrians.
218	Chapter 13 People and Communities / General	It is not clear from reading the section what sources of information are intended to be used. There is reference to assessments of business, community health etc. but there are existing sources of information that would inform this assessment. This needs to be clarified in the EIA.
219	Chapter 14 Road Drainage and the Water Environment / General	The redline boundary only takes account of the road area itself and does not consider the space that will be required for attenuation storage and flood zone compensation. It is critical to consider this as early as possible to ensure the Council do not have any space issues further down the line.
220	Chapter 14 Road Drainage and the Water Environment / General	With regards to WFD, there is no mention of whether any of the waterbodies affected by the proposals are heavily modified waterbodies (HMWB). This is an important factor which should have early consideration - liaison with the Environment Agency at an early stage to discuss whether there are any mitigation measures for the waterbodies which could be delivered as part of the project should be undertaken.
221	Chapter 14 Road Drainage and the Water Environment / General	Again with regards to WFD, there is no specific mention of watercourse crossing design (where new watercourses are being crossed) which is a key consideration in highways schemes and the design for which needs to involve clear span bridges and not culverts etc. Early communication with Environment Agency on this will be essential.
222	Chapter 14 Road Drainage and the Water Environment / Section 14.2.4	It is stated that a WFD assessment will be prepared and appropriate design and mitigation measures would be incorporated into design to facilitate WFD compliance. Highways England need to clarify whether this will be a separate, standalone assessment or included as part of the environmental statement. Additionally, the WFD will need to be considered as part of project design development (as an ongoing input) to facilitate WFD compliance, then a WFD assessment will need to be produced when the final design is frozen/confirmed so that compliance can be proven.
223	Chapter 14 Road Drainage and the Water Environment / Section 14.2.7	It is noted that consultation with relevant regulatory authorities with regards to consents and licensing for project activities will occur, but it is also noted that there will be engagement with the 'ecology team'. The council requests greater clarity on whether it means ecology team at HE or at the council, at the Environment Agency, or within a consultancy.
224	Chapter 14 Road Drainage and the Water Environment / Section 14.2.7	The Scoping Report states that 'none of these waterbodies [unnamed rivers and ordinary watercourses] are monitored under the second cycle of the water framework directive'. Although they are not monitored under WFD anymore, Highways England need to clarify that works affecting the waterbodies still needs to comply with WFD, as they should be assessed as part of the downstream waterbody (as cumulative effects will need to be accounted for).

225	Chapter 14 Road Drainage and the Water Environment / Section 14.3.2	The Council expects compliance with Essex County Council's (ECC's) Sustainable Drainage Systems Design Guide, Non-statutory technical standards for sustainable drainage systems, The CIRIA SuDS Manual (C753), BS8582 Code of practice for surface water management for development sites. The Council will treat the development consistently with major planning applications which for which the Council is a consultee for. If evidence can be provided as to why the criteria cannot be achieved we may accept a lower standard.
226	Chapter 14 Road Drainage and the Water Environment / Section 14.4	There is no mention of WFD objectives for the waterbodies within the study area. This should be clarified including where they are the study area, current status, HMWB classification and objectives.
227	Chapter 14 Road Drainage and the Water Environment / Section 14.5.2 and 14.5.5	The Council agrees that there is probably enough baseline data available to characterise quality of surface water receptors, though as noted, the approach will definitely require confirmation from the Environment Agency. The Water Features Survey sounds like a suitable and sensible approach to verify/check baseline data.
228	Chapter 14 Road Drainage and the Water Environment / Section 14.5.6	The Thames Local Flood Risk Management Strategy including the Critical Drainage Areas included in this document should be considered. The Council would expect to see a detailed analysis of the impact of the scheme with reference to the latest surface water modelling in the Surface Water Management Plan. Any other relevant document should also be considered.
229	Chapter 14 Road Drainage and the Water Environment / Section 14.5.8	It must be ensured that infiltration testing and groundwater testing in line with BRE 365 is conducted. In line with the discharge hierarchy, infiltration is first preference. Supporting infiltration tests will need to be provided if this is the proposed method and should be demonstrated that any infiltrating water will not be contaminated. The next preference is to discharge to watercourses, then sewers as a last resort (evidence from the water company of available discharge capacity to be provided if this is the proposed method). If discharging to the estuary then tide locking and surcharging must be considered.
230	Chapter 14 Road Drainage and the Water Environment / Section 14.5.9 and 14.5.10	Methodology regarding sediment contaminants to create a 'baseline' sounds sensible, particularly initial consultation with EA/MMO/PLA for any sediment analysis data prior to undertaking any sampling. Comparison to CEFAS criteria/guidance also sounds appropriate.
231	Chapter 14 Road Drainage and the Water Environment / Table 14.2	The River Thames Estuary has been assigned 'medium' value for water quality with rationale that the waterbody is currently at moderate status. The Council disagrees with this - just because the waterbody isn't in good condition (and may never be) it does not mean that the water quality should be valued any less. The value should be high/very high, as the project must present no deterioration to WFD status. The Council queries whether WFD waterbody status should be used as a rationale for receptor value, if a WFD assessment is being done separately to the assessment of effects.
232	Chapter 14 Road Drainage and the Water Environment / Table 14.2	Same comment as above but for Mardyke waterbody - value for water quality should be high/very high status.
233	Chapter 14 Road Drainage and the Water Environment / Table 14.2	The value for water quality for Unnamed main rivers and ordinary watercourses is 'low', with rationale that the waterbodies are unclassified under WFD with 'low rarity' at local scale. These two should be split up in to two separate categories (main rivers, and then ordinary watercourses and drainage ditches). The value for main rivers should be at least medium if not high. The value for the latter might be medium.
234	Chapter 14 Road Drainage and the Water Environment / Section 14.7	The methodology for assessment of potential effects on water environment following DMRB guidance, study area/assessment periods/future baseline/significance criteria sounds appropriate. Same applies to the FRA.
235	Chapter 14 Road Drainage and the Water Environment / Section 14.7.12	The Essex SuDS Guide and CIRIA SUDS Manual C753 provides an index approach to mitigating surface water /groundwater pollution which should be followed. This may help to pick appropriate SuDS in terms of water quality requirements.
236	Chapter 14 Road Drainage and the Water Environment / Section 14.7.15	The Environment Agency updated climate change allowances should be referred to.
237	Chapter 14 Road Drainage and the Water Environment / Section 14.7.15	Consideration should be paid to the impact of flooding on local resident's health. Flooding can result in loss of a home and possessions, place of work and as such can have a major impact on mental health and wellbeing. More severe flooding could result in loss of life and family members left behind may experience poor mental health through bereavement (see justification for a full HIA provided). Flood mitigation measures will be of vital importance in relation to the proposed development. The selection of flood defences is also vitally important to the visual amenity and character of the local landscape, as well as access to the riverfront.
238	Chapter 14 Road Drainage and the Water Environment / Section 14.7.15	How water pollution will be mitigated should also be included in the FRA.
239	Chapter 14 Road Drainage and the Water Environment / Section 14.8 and 14.9	It must be ensured that during construction and operation, flood risk or water pollution is not increased off site. If any features that will be used to manage surface water during construction will also be used as part of the final drainage scheme, it must be ensured that appropriate features are in place to stop pollution/sediment entering these features. Any final surface water features should be fully inspected to ensure they are working efficiently.
240	Chapter 14 Road Drainage and the Water Environment / Section 14.8	Description of significant effects (construction and operation) seem comprehensive and sensible.
241	Chapter 14 Road Drainage and the Water Environment / Section 14.9	The potential mitigation measures seem sensible, however as part of the attenuation storage, opportunities to (re) create new wetland features, e.g. fens on the Mardyke, to also benefit landscape and biodiversity need to be considered.
242	Chapter 14 Road Drainage and the Water Environment / Section 14.10	The Council agrees that no aspects can be scoped out at this stage.
243	Chapter 14 Road Drainage and the Water Environment / Figure 14.1	SuDS should be located outside of undefended Flood Risk Zones. Additional volumes of water shown to flow to the site must be stored for/accommodated to ensure no increase in flood risk as a result of the development.
244	Chapter 15 Climate / Section 15.4	The baseline information does not mention any actual average temperatures, rainfall etc., only observed changes, so there is no base to start from. Highways England need to take into consideration average met data for the South East for Temperature, Rainfall, Wind, Sunshine and Air Frost, etc.
245	Chapter 15 Climate / Section 15.4.4	Highways England need to clarify why has the 2080 scenarios has not been taken into account bearing in mind the design life for the tunnel is 120 years.

246	Chapter 15 Climate / Section 15.4.5	There is no mention of local greenhouse gas emissions to the scheme, or embodied carbon from the construction industry. Bearing in mind the UK construction industry is the largest consumer of natural resources with an average of over 400 million tonnes of material consumed every year. This accounts for approximately 10% of the total UK carbon emissions (Embodied Energy and Carbon, ICE (Accessed September 2017)- https://www.ice.org.uk/knowledge-and-resources/briefing-sheet/embodied-energy-and-carbon).
247	Chapter 15 Climate / Section 15.7	No reference has been made to Highways England Major Projects' Instructions 'Environmental Impact Assessment: Implementing the Requirements of 2011/92/EU as amended by 2014/52/EU (EIA Directive)' (MPI-57-052017).
248	Chapter 15 Climate / Section 15.7.4	Highways England needs to consider embodied carbon from use of materials in construction within the assessment.
249	Chapter 15 Climate / Section 15.7.6	Highways England need to clarify the methodology used to carry out the climate change risk assessment as it is not clear from the text.
250	Chapter 15 Climate / Section 15.7.10	Clear and adequate mitigation measures at both the construction and operational phases of the project will be required to reduce the levels of greenhouse gas emissions, which in turn will aid in reducing the impact of climate change in the borough and wider areas. This will also work towards reducing poor air quality which can be detrimental to human health (for example leading to premature mortality and exacerbation of conditions such as Asthma and COPD). Climate change can lead to more extremes in the weather and is predicted to lead to hotter summers. In terms of health hotter summers may lead to increased A+E attendances related to heatstroke and other heat related ill health. Extreme weather events should be considered in terms of impact of this proposed crossing and consideration for mitigation measures such as tree planting which can provide shade and SUDS as well as other health benefits.
251	Chapter 15 Climate / Table 15.2	Although mentioned further on in the chapter, there is no mention in this table of embodied carbon from materials used in construction, which for an average highways scheme will make up approximately 70%-80% of the construction carbon footprint.
252	Chapter 15 Climate / Table 15.3	Again there is no mention of embodied carbon associated with materials in the greenhouse gas assessment. This should be considered.
253	Chapter 15 Climate / Section 15.7.17	General comment - PAS2080 was bought in to try and reduce carbon and cost across the infrastructure industry, Highways England need to clarify whether any effort is going to be made to encourage Low Carbon design by monitoring Carbon throughout the project not just at the end with HE's Carbon Calculation tool.
254	Chapter 15 Climate / Section 15.8.9	When the Project is operational, i.e. has vehicles on it, the greenhouse gas emissions from the increased volume of traffic has the potential to be significant. Highways England need to clarify why is this not considered here.
255	Chapter 16 Cumulative Effects / General	Consultation with the Council should be undertaken to agree on the final list of developments to be included in the cumulative assessment.
256	Chapter 16 Cumulative Effects / General	Tilbury Energy Centre has not been included within the list of developments for inclusion in the cumulative assessment. This is an NSIP located adjacent to the proposed development. Due to the proximity of all three NSIPs (Tilbury2, Tilbury Energy Centre and Lower Thames Crossing) the cumulative effects of these developments need to be thoroughly assessed, including the impacts on traffic due to the increased number of vehicles and HGVs all three NSIPs will create.
257	Chapter 16 Cumulative Effects / General	Although DP World London Gateway has been developed, the capacity at this site will continue to increase. Therefore, the cumulative assessment within the EIA should also take this into consideration, this is particularly important within the noise and air quality cumulative assessments.
258	Chapter 16 Cumulative Effects / General	Highways England need to consider the cumulative effect of the various developments (Tilbury2, Tilbury Energy Centre, and the Lower Thames Crossing). The Council requires further clarification on how does these various developments impact on the designated assets within the Thames Corridor.
259	Chapter 16 Cumulative Effects / General	Consideration of existing planning applications (both residential and commercial) and developments in close proximity to the proposed LTC and the cumulative impacts of construction and operation of all of these developments in terms of noise, air pollution, access and social cohesion and employment will be vital in developing appropriate mitigation measures that will reduce the impact on local resident's health.
260	Chapter 16 Cumulative Effects / General	The chapter uses guidance outlined in the PINS Advice Note 17, which is the most up-to-date guidance on a methodology for assessing cumulative effects for Nationally Significant Infrastructure Projects.
261	Chapter 16 Cumulative Effects / General	Cumulative impact on wider marine environment also needs to be accounted for.
262	Chapter 16 Cumulative Effects / Section 16.2	The methodology does not include a significance criteria/indication as to how significance will be established. Section 3.4.7 of PINS Advice Note 17 provides information on the requirements of the significance criteria for cumulative effects assessment.
263	Chapter 16 Cumulative Effects / Section 16.2	The approach for the cumulative effects assessment of air quality and noise and vibration should be clarified in the methodology; as per Section 3.4.4 of PINS Advice Note 17, operational assessments for air quality and noise are often already due to the use the traffic forecast results. If this is the case, this should be included for clarity.
264	Chapter 16 Cumulative Effects / Section 16.2	Highways England need to ensure that a comprehensive cumulative assessment of the air quality effects during construction is undertaken. The construction of the lower Thames crossing would be likely to coincide with the construction of Tilbury2 and the cumulative impact on ambient air quality effects is likely to be significant.
265	Chapter 16 Cumulative Effects / Section 16.2.3	For 'Intra-Project Cumulative Effects', reference is made to results being presented in a matrix. Further clarity is required on this method, and sight of the assessment matrix proposed would be useful.
266	Chapter 16 Cumulative Effects / Section 16.2.5	Reference is made to the EIA Regulations (2009) as amended, Highways England need to refer to the Infrastructure Planning (EIA) Regulations (2017).
267	Chapter 16 Cumulative Effects / Section 16.2.10	In accordance with the Infrastructure Planning (EIA) Regulations 2017, the assessment of cumulative effects should include 'effects with other existing and/or approved projects'. The assessment methodology presented within the chapter states that all Tiers of 'other development' are included; justification should be provided to support this, such as the use of the Precautionary Principle.
268	Chapter 16 Cumulative Effects / Appendix E	The PINS Advice Note 17 recommends a table for recording the Long List of 'other developments' and the subsequent Short List. The table contained within Appendix E only contains the Short List of 'other developments', the Long List should also be included for clarity.
269	Chapter 16 Cumulative Effects / Appendix E	A series of drawings should be produced to accompany the EIA, showing the proposed Scheme in relation to each of the 'other developments' with the ZOIs around both, so that the ZoI overlaps are shown visually.

End of comments

Information in support of a request for a full and comprehensive Health Impact Assessment on the proposed development of the Lower Thames Crossing

With regards to the Environmental Impact Assessment (EIA) Scoping report for the Lower Thames Crossing proposal, it is felt important that consideration is paid to the potential human health impacts in respect of this proposed development. This relates to the health and wellbeing of any person(s) employed during construction and operational stages, local residents living in communities close to the proposed development, and the wider community as a whole where impacts may be felt via the wider transport network.

It is felt to be a useful starting point, to provide a definition of what is meant by the term 'human health', to support and enable full consideration of any potential health impacts that may arise from this proposed development. This will allow the appropriate and adequate mitigation processes to be developed and implemented to reduce such impacts on health.

The World Health Organisation (WHO) defines health as "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." This definition encapsulates the 'holistic' and 'whole' person. Health and wellbeing can be affected by a variety of complex and interrelated factors including the built environment and communities that people live in. This definition also focusses on keeping people well. In order to support people to remain well, acknowledgement of the role that the wider determinants of health can play needs to be recognised. This includes consideration of issues in the built environment such as landscape, traffic, congestion, and air quality, and how these issues can impact on health.

The proposed route for the Lower Thames Crossing essentially divides the borough into two halves. This has the potential to sever links across the borough and create two sets of communities that work in isolation from each other. The health impacts of such a proposal on community and social cohesion, as well the potential to inhibit access to health services and local amenities (e.g. healthy food environments), requires careful consideration. Alongside this, it will be vitally important to determine what the health needs of different wards within the borough are and how they might be affected, as well as identifying what the cumulative effects might be, as a result of the development of the crossing. The wards that are most likely to be affected, in regard to the resident's health, have been identified and are discussed below in turn. As a result, it is strongly recommended that a Health Impact Assessment (HIA) is required, and that this is completed in relation to this proposed development to ensure that any negative consequences of the development are identified and mitigated, and that opportunities for improving the well-being of the community are maximised. We would request that we are included and consulted on during the process of completing the HIA, in particular around the scope and methodology employed. As we have access to more localised health intelligence we feel that it would be useful for Highways England to consult with Thurrock Council Public Health Team to ensure all health impacts are fully identified and assessed, and to inform appropriate mitigation measures.

To support this request for a HIA, we have highlighted the key health issues for the communities that have the potential to be impacted by this development.

Proximity to residential housing, local amenities and local health profile

Thurrock has a population of 165,184 people. It is served by 20 wards, 9 of which may experience potentially significant health impacts related to the proposed Lower Thames Crossing development. Each is discussed below in turn, and an overview of the health needs of each sub-population group will be included that provides the 'bigger picture' of the health needs of Thurrock. This will be focussed on the wards that are most likely to be impacted on by the proposed development. Further to this, inclusion of the potential cumulative impacts on Thurrock as a whole will be outlined. The populations of people most likely to be affected by the proposed development are children, older people, those living with long term conditions and those living in areas of higher deprivation.

Tilbury

The town of Tilbury lies to the West of the proposed Lower Thames Crossing. It is covered by two wards (Tilbury Riverside and Thurrock Park and Tilbury St Chads). The total population of Tilbury is 13,495 people (7274 –Tilbury Riverside and Thurrock Park; 6221 – Tilbury St Chads).

Key health concerns in these wards (Tilbury Riverside and Thurrock Park and Tilbury St Chads) - (taken from Local Health Data, 2017) include:-

- The percentage of children aged 0-15 years - Tilbury Riverside and Thurrock Park – 28.2% and Tilbury Chads 25.8%. This is significantly higher than the Thurrock (22.3%) and England averages (19%).
- The percentage of older people (aged 65+) in Tilbury Riverside and Thurrock Park and Tilbury St Chads are 10.8% and 10.6% respectively.
- Life expectancy for males in Tilbury Riverside and Thurrock Park (75 years) and Tilbury St Chads (76.3 years) is significantly lower than Thurrock (79.1 years,) and national (79.4 years) averages.
- Life expectancy for females in Tilbury Riverside and Thurrock Park (79 years) is significantly lower than the Thurrock (82.5 years) and national (83.1 years) averages. Life expectancy for females in Tilbury St Chads (80 years) is significantly lower than the national average.
- Poverty - 38.6% (Tilbury St Chads) and 40.2% (Tilbury Riverside and Thurrock Park) of children are living in poverty which is significantly higher than the Thurrock (21.8%) and national averages (19.9%).
- Deprivation - Tilbury Riverside and Thurrock Park (36.6) and Tilbury St Chads (40.1) have significantly higher IMD score than Thurrock (21.6) and the national (21.8) averages.
- Limiting long term illness/disability – 15.7% of people in Tilbury Riverside and Thurrock Park and 18.4% of people in Tilbury St Chads are living with a long-term condition. There is a significantly higher percentage of people with a long-term condition residing in Tilbury St Chads than the national (17.6%) average.
- Premature mortality rates for conditions for deaths from all causes- The Standardised Mortality Ratio (SMR) for under 75's - 145.4 in Tilbury Riverside and Thurrock Park and 148.7 in Tilbury St Chads which is significantly higher than both Thurrock (103) and England (100) averages.
- Deaths and early deaths that could largely be prevented – circulatory disease (all ages) and respiratory disease deaths are significantly higher than the Thurrock and national averages in both wards that comprise Tilbury.
- In Tilbury St Chads premature deaths from Coronary Heart Disease for all ages (223.2 SMR) are significantly higher than the Thurrock (114.9) and National (100) averages.

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- In Tilbury Riverside and Thurrock Park premature deaths from CHD (all ages) measured by SMR is 150. This is significantly higher than the national (100) average.
- Premature deaths from cancer across all ages measured by SMR is 130.9. This is significantly higher than the national (100) average.
- Deaths or early deaths from stroke are significantly higher than the National (100) average in Tilbury Riverside and Thurrock Park (173.1 SMR).
- Hospital admissions for Coronary Obstructive Pulmonary Disease (COPD) - The Standardised Admission Ratio (SAR) is significantly higher for Tilbury (209) than the Thurrock (118.6) and national (100) averages.
- The incidence of lung cancer –The Standardised Incidence Ratio (SIR) in both wards is 122.9.
- Social Isolation (based on number of pensioners living alone) – lots of people experience social isolation – 39.1% Tilbury Riverside and Thurrock Park and 32.1% Tilbury St Chads. The percentage of people living in Tilbury Riverside and Thurrock Park living in social isolation is significantly higher than the Thurrock (31.9%) and National (31.5%) averages.
- Childhood obesity –13% of 4-5 year olds in Tilbury. This is significantly higher than the national average (9.3%). Of 10-11 year olds 26.2% children in Tilbury are obese, which is significantly higher than the national (19.3%) average.

To summarise, existing residents are more likely to be living in poverty and deprivation. They are more likely to die at a younger age from several conditions that could be appeased by better environmental conditions. There are higher proportions of older people living alone, leaving them at risk of social isolation. Additionally, childhood obesity is a key health priority in this area.

East Tilbury

East Tilbury is located to the East of the proposed Lower Thames Crossing. East Tilbury has a population of 6469 people.

Key health concerns in this ward (taken from the Local Health data 2017) include:-

- 21.4% are aged 0-15 and 13.1% are aged 65+. There are significantly higher numbers of children in East Tilbury than the national average (19%).
- Emergency hospital admissions for COPD – The SAR is 147.3 which is significantly higher than the England (100) average.
- The incidence of lung cancer – The SIR in East Tilbury is 132.
- Social Isolation - 22.2% of people living in this ward experience social isolation.
- Obesity – 29.3% of adults, 7% of 4-5 year olds and 19.4% of 10-11 year olds are obese.

There are higher numbers of children residing in this ward, who may be more vulnerable to the potential health impacts arising from the proposed development. In East Tilbury there are high levels of emergency hospital admissions for COPD which could be reduced by better environmental conditions that promote good health.

Orsett

This ward lies to the North-East of the proposed Lower Thames Crossing and has a total population of 6168.

Key health concerns in this ward (taken from Local Health Data 2017) include:-

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- 18% are aged 0-15 and 20.2% are aged 65+. There are significantly higher numbers of people aged 65+ living in Orsett than both the Thurrock (13.8%) and England (17.7%) averages.
- Limiting long term illness/disability – 14.2% (876 people) in Orsett.
- Social Isolation - 19.5% of the people in this ward.
- Obesity - 25.6% of adults and 11% of 4-5 year olds are obese. This rises to 18.9% of 10-11 year old children living in Orsett.
- There are 3 traveller sites in Thurrock and the Gammon Field site at Long Lane (22 plots), considered in the ward of Orsett, and under the proposed route will need to be relocated. Gypsies and Travellers experience some of the poorest health outcomes including the lowest life expectancy of any group in the UK and high infant mortality rates.

Orsett has a significantly higher proportion of people aged 65 and over who may be more vulnerable to health impacts, including social isolation and poor health generally.

Ockendon

Ockendon is located West of the proposed site and is the most Northern ward on the West side of the borough. Ockendon has a population of 10,691.

Key Health concerns in this ward (taken from Local Health Data 2017) include:-

- 23.3% are aged 0-15 years which is significantly higher than the national average (19%). There are 13.1% of people living in Ockendon who are aged 65+.
- Limiting long term illness/disability 18.1% of population have an long-term condition which is higher than the Thurrock and England averages (15.6% and 17.6% respectively).
- Poverty – 24.4% of children are living in poverty which is significantly higher than both Thurrock (21.8) and England (19.9%) averages.
- Premature mortality rates for deaths from all causes – The SMR for deaths in those aged under 65 is 110.3.
- Deaths and early deaths from conditions which could be prevented as measured by SMR – Cancer (all ages) – 132.1 and CHD (all ages) – 138.5 SMR are significantly higher than the National (100) average.
- Emergency hospital admissions for COPD – The SAR is 148.1 which is significantly higher than the national (100) average.
- The incidence of lung cancer – The SIR is 140.
- Social Isolation – 38% of people in Ockendon. This is significantly higher than the Thurrock (31.9%) and England (31.5) averages.
- Obesity – 28.6% of adults, 10.1% of children aged 4-5 years of age and 24.9% of 10-11 year olds are obese. The percentage of children aged 10-11 years who are classified as obese is significantly higher than the national averages (19.3%).

In Ockendon, higher proportions of people are living with long-term conditions, alongside higher premature mortality rates from conditions that could be reduced by better environmental conditions. Poverty is also a concern with high levels of children and families living in deprivation. As with some of the other wards in the borough social isolation is a health concern in Ockendon. Obesity is also a key consideration particular in relation to children and promoting their health and wellbeing.

Chadwell St Mary

This ward lies to the South-West of the proposed development. Chadwell St Mary has a population of 10,195 people

Key health concerns for this ward (taken from Local Health Data 2017) include:-

- 22.1% are aged 0-15 years which is higher than the national (19%) average. There are 18.6% of people living in Chadwell St Mary who are aged 65+. This is significantly higher than the Thurrock (13.8%) and national (17.7%) averages.
- Life expectancy for males is 77 years. This is significantly lower than the England (79.4 years) average.
- Life expectancy for females is 80.3 years. This is significantly lower than both the Thurrock (82.5 years) and England (83.1 years) averages.
- Poverty- 31.1% of children are in poverty which is significantly higher than the Thurrock (21.8%) and national (19.9%) averages.
- The IMD score of for deprivation in Chadwell St Mary (28.4) is significantly higher than both than the Thurrock (21.6) and national (21.8) averages.
- Limiting long term illness/disability – The percentage of people living with a limiting long term condition in Chadwell St Mary (21.9%) is significantly higher than the Thurrock (15.6%) and England (17.6%) averages.
- Premature mortality rates for deaths from all causes – the SMR for deaths for under 75's is 137.2 which is significantly higher than both Thurrock and England average (103 and 100 SMR respectively).
- Deaths and early deaths from conditions that could be prevented - Cancer (under 75's) as measured by SMR is 144.2 is significantly higher than both the Thurrock (105.9) and England (100) averages.
- Premature deaths from cancer across all ages (132.8 SMR) and respiratory condition (all ages) – 142.1 SMR are significantly higher than the England (100) average.
- Deaths or early deaths from strokes, measured by SMR, is 107.5.
- Emergency hospital admissions for COPD – the SAR is 144.3 which is significantly higher than the national average (100).
- The incidence of lung cancer – the SIR is 124.6.
- Social Isolation – 32.1% of the population of Chadwell St Mary.
- Obesity - 27.6% adults, 12.3% of 4-5 year olds and 20% of 10-11 year olds are classified as obese in this ward. The percentage of obese young children in this ward is significantly higher than the national (9.3%) average.

Chadwell St Mary is an area with high levels of poverty. Life expectancy is significantly lower for both males and females. Premature mortality from several conditions could be appeased by better environmental conditions. There are high levels of people living with long-term conditions as well as emergency hospital admissions relating to COPD. Obesity is a priority health area for young children (aged 4-5 years) who may be more vulnerable to health impacts.

Little Thurrock Blackshots

Little Thurrock Blackshots lies to the South-West of the proposed Lower Thames Crossing and has a total population is 6,059.

Key health concerns for this ward (taken from Local Health Data 2017) include:-

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- 18.6% are aged 0-15 years and 21.3% are aged 65+. There is a significantly higher number of people aged 65 and over living in this ward than the Thurrock (13.8%) and England (17.7%) averages.
- Limiting long term illness/disability -18.4% of people in this ward which is significantly higher than the Thurrock (15.6%) average.
- Poverty – 15.1% of children live in poverty.
- Social Isolation – 29.4% of people living in this ward experience social isolation.

In Little Thurrock Blackshots, there are high numbers of older people and people with long-term conditions. Additionally, many older people are living alone, and as such are at increased risk of experiencing social isolation which can negatively impact on both physical and mental health.

Stifford Clays

Stifford Clays lies west of the proposed site. There is a total population of 6,628 people living in this ward.

Key health concerns for this ward (taken from Local Health Data 2017) include:-

- 19% aged 0-15 years and 21.6% are aged 65+. There is a significantly higher number of people aged 65+ living in this ward than the Thurrock (13.8%) and national (17.7%) averages.
- Limiting long term illness/disability – 20.4% of people in Stifford Clays live with an LTC which is significantly higher than the Thurrock (15.6%) and national (17.6%) averages.
- Emergency hospital admissions for COPD – the SAR is 125.8 in this ward which is significantly higher than the national average (100).
- Premature deaths from conditions that could be prevented (CHD –all ages) – the SMR is 118.3 in Stifford Clays.
- Social isolation – 35.9% of people in this ward experience social isolation which is significantly higher than Thurrock (31.9%) and national (31.5%) averages.

There are significantly higher numbers of people with long-term conditions in Stifford Clays. High numbers of emergency hospital admissions related to COPD as well as premature mortality from CHD could be reduced with better environmental conditions. As with the many of the other wards discussed, there are higher numbers of older people living alone which puts them at increased risk of social isolation.

Belhus

Belhus lies between Ockendon and Stifford Clays and is West of the proposed Lower Thames Crossing. Belhus has a population of 10,256 people

Key health concerns for this ward (taken from Local Health Data 2017) include:-

- 23.2% are aged 0-15 years which is significantly higher than the national (19%) average. There are 11.5% of people living in Belhus who are aged 65+.
- Poverty– 25.2% of children are in poverty which is significantly higher than the Thurrock (21.8) and national (19.9%) averages.
- The IMD score for deprivation in Belhus is 32 which is significantly higher than the Thurrock (21.6) and England (21.8) averages.

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- Limiting long term illness/disability – 18.9% of people have an LTC in Belhus. There are significantly higher percentages of people living with long-term conditions in this ward than both Thurrock (15.6) and England (17.6%) averages.
- Premature deaths from all causes – The SMR for deaths in under 75's is 132.1 which is significantly higher than both the Thurrock (103) and England (100) averages.
- Deaths or early deaths from conditions that could be prevented – cancer (under 75's), and CHD (all ages), are significantly higher than the Thurrock and National averages.
- Social Isolation – 34.9% of people experience social isolation in this ward which is significantly higher the national (31.5%) average.
- Obesity – 30.2% of adults, 9.9% of 4-5 year olds and 26.3% of 10-11year olds are obese. The percentage of 10-11 year old children who are obese in Belhus is significantly higher than the national (19.3%) average.

Existing residents living in Belhus experience high levels of deprivation. The number of people dying prematurely from many conditions could be appeased by better environmental conditions. There are significantly higher numbers of older people living alone in this ward. This places these individuals at increased risk of social isolation. Obesity is an area of priority in relation to children, in terms of promoting health and wellbeing.

Thurrock – Borough-wide considerations

Key Health concerns across Thurrock (taken from Public Health England) include:-

- Exposure to rail, air and traffic noise of 65DB (A) + (day and night) – 2.7% (4460 people) are affected by daytime exposure and 4.8% (7929 people) at night.
- 5.6% of premature deaths are attributable to air pollution particulate matter (PM2.5) which is higher than the England average (4.7%). Thurrock have the highest number of deaths attributable to particulate matter when compared with their CIPFA comparators and 2nd highest across the East of England region.
- Annual level of air pollution particulate matter (PM2.5) - The annual level is 10ug/m3. Thurrock has the highest level of annual air pollution than their CIPFA comparators and is 2nd highest in the East of England region.
- Currently, there are 18 AQMAs across the borough, predominantly in the South and West of the borough. All of these have the potential to be impacted further by the proposed crossing in terms of the broader impact that it may have on the local road network and potential for traffic congestion. Therefore the potential health impact this might have on residents near these AQMAs needs to be assessed.
- Common Mental Health Disorders (CMHDs) – 17.9% of people aged 16-74 years have a CMHD.
- Depression – 8.5% of people are recorded as having depression.
- 5-a-day recommended intake of fruit and vegetables – only 40.1% of adults and 49.2% of children (aged 15) eat the recommended 5-a-day.
- Physical activity – 53.9% of adults meet recommended physical activity levels per week, 31% of adults are classed as inactive, and only 13.7% of children are physically active for at least 1hour per day. 76% of children are engaged in sedentary behaviour for 7+ hours per day.

Thurrock experiences higher levels of air pollution annually than other similar areas, as well as across the East of England. 5.6% of premature deaths are attributable to poor air quality, which could be reduced by introducing better environmental conditions. As described above, there are many existing residents who are already impacted on by the effects of noise pollution, reportedly more during the night. This could be affecting individuals' ability to

Appendix 2 Thurrock Council – Information in support of a request for a full and comprehensive Health Impact Assessment on the proposed development of the Lower Thames Crossing

sleep and as such could lead to sleep deprivation. Getting a good night's sleep is beneficial for improving concentration, mood and wellbeing.

There are high numbers of existing residents in the borough who experience poor mental health, which for some may be associated with living alone, and as such being at increased risk of social isolation. There are low numbers of both adults and children who eat the recommended 5-a-day portions of fruit and vegetables. There are high numbers of existing residents who are inactive or who do not meet the recommended physical activity levels.

As can be seen from the information presented above, Thurrock as a whole is very varied in terms of health needs across the borough. There are many pockets of extreme deprivation and numerous existing health inequalities. These existing issues have the potential to be exacerbated by the development of the Lower Thames Crossing, particularly in relation to the potential for increased levels of air and noise pollution, and severance of local communities. There is also potential that some of the 'Rights of Way' may be impeded upon which in turn will affect people's ability to move across the borough or engage in walking and cycling as a form of physical activity.

It is also possible that there may be some indirect impact on other areas (outside of the 9 wards described above) as a result of the proposed Lower Thames Crossing. Consideration should be given to whether there may be increased demand on existing health services (e.g. GP practices and secondary care services at Basildon Hospital) which are already oversubscribed and under pressure, as a result of the proposed new crossing.

Evidence Base

Although the evidence base on the built environment and particularly transport and health is in its infancy in parts or is sometimes differential or conflicting for different populations at a local or wider level, the emerging health evidence is also considered as a basis for fully investigating the health impact the proposed new road and crossing.

Some of the highlighted impacts of new roads and transport interventions which are considered important in terms of the evidence base and the subsequent impact on local population health include:

- Noise – in particular its impact on mental health and wellbeing related to stress from noise, and sleep disturbance from noise, and on cardiovascular health (increased blood pressure and increased risk of coronary heart disease).
- Air Pollution – impacts on respiratory and cardiovascular health and on vulnerable groups.
- Community severance - impacts on mental well-being, social isolation, access to healthcare and amenities and services.
- RTAs – consideration of the safety of the intersect between old and new road networks and the prevention of shifts in RTAs to other roads.
- Physical Activity – impact on obesity, long-term conditions (such as cardiovascular diseases), and mental health and wellbeing.
- Health Inequalities - the proposed route is located close to areas of high deprivation and health inequality. This proposed development has the potential to add a further burden to already disadvantaged communities.

Additional considerations

Additionally, as part of any subsequent EIA, HIA and planning applications, we would like to see the following included:-

Appendix 2 Thurrock Council – Information in support of a request for a full and comprehensive Health Impact Assessment on the proposed development of the Lower Thames Crossing

- A noise impact assessment that takes into account the importance of implementing adequate noise mitigation measures (as needed) to reduce the impact on resident's health and wellbeing.
- An air quality impact assessment that includes consideration of the impact on human health that poor air quality can have, particularly in areas where health inequalities exist, and where premature mortality rates are high and there are large numbers of people with respiratory conditions or COPD that can be exacerbated by air pollution (as is the case in many of the wards located in close proximity to the proposed Lower Thames Crossing – see above for details). This will be vital considering the potential increase in traffic within the borough's transport network as a result of the proposed Lower Thames Crossing.
- Consideration should also be paid to the inclusion of cycling and walking infrastructure across the borough to mitigate wider transport network activity and the replacement and enhancement of any potentially lost existing rights of way, as part of the development, which promotes social cohesion and encourages residents to engage in physical activity.
- Visually pleasing environments are beneficial for mental health and wellbeing and can support people to spend more time outside being physically active, feel safe in their local communities, enhance a sense of pride of their local area and increase social cohesion. Incorporation of mitigating actions such as green bridges that will connect local areas that will be severed by the proposed route would create aesthetically pleasing environments, connects communities and enhances social cohesion. Such bridges could incorporate some of the walking and cycling infrastructure proposed above to promote more sustainable modes of travel and increase physical activity.
- There is emerging evidence about the effectiveness of urban greening and tree planting in mitigating the effects of air pollution. Strategic planting of trees can reduce the impacts of poor air quality. Some of the best species to use in terms of reducing air pollution as calculated by the urban tree air quality score (UTAQS) include; alder, field maple, hawthorn, larch, laurel, Lawson cypress, Norway Maple, pine and Silver birch. More broadly urban greening and planting create stimulating and pleasing environments which as noted above are beneficial to mental health and wellbeing. Introduction and enhancement of green environments also benefit in terms of participation in physical activity, social connectivity, and access to nature. Consideration should therefore be paid to the inclusion of tree planting and urban greening as part of the development process.

Conclusion

Based on the above information, we request that a comprehensive HIA be undertaken as part of the planning process. This is in light of the size of the development and the potentially large impacts on health that may be result from the development. The HIA should consider all aspects of human health and how they may be affected by the proposed development. Alongside this, clear mitigation measures should be included that aim to reduce and minimise the impact of the development on the health of the existing and future residents who live in Thurrock. As Thurrock has a currently higher proportion of young children and a growing older population who are more likely to have multiple health needs, a HIA that protects and promotes their right to good health, will be of vital importance.

As noted earlier in this report we would request that we are consulted on during the process of completing the HIA, in particular around the scope and methodology employed. As we have access to more localised health intelligence we feel that it would be useful for Highways England to consult with Thurrock Council Public Health Team to ensure all health impacts are fully identified and assessed and to inform appropriate mitigation measures.

Stifford Clays Key Health Concerns:-

- Population - 19% aged 0-15 years and 21.6% are aged 65+. There is a significantly higher number of people aged 65+ living in this ward than the Thurruck (13.8%) and national (17.7%) averages.
- Limiting long term illness/disability - 20.4% of people in Stifford Clays live with an LTC which is significantly higher than the Thurruck (15.6%) and national (17.6%) averages.
- Emergency hospital admissions for COPD - the SAR is 125.8 in this ward which is significantly higher than the national average (100).
- Social isolation - 35.9% of people in this ward experience social isolation which is significantly higher than Thurruck (31.9%) and national (31.5%) averages.

Health Impact Ass

- Population - 18% are aged 0-15 and 20.2% are aged 65+. There are significantly higher numbers of people aged 65+ living in Orsett than both the Thurruck (13.8%) and England (17.7%) averages.
- Limiting long term illness/disability - 14.2% (876 people) in Orsett.
- Obesity - 19.5% of the people in this ward.
- Obesity - 25.6% of adults and 11% of 4-5 year olds are obese. This rises to 18.9% of 10-11 year old children living in Orsett.

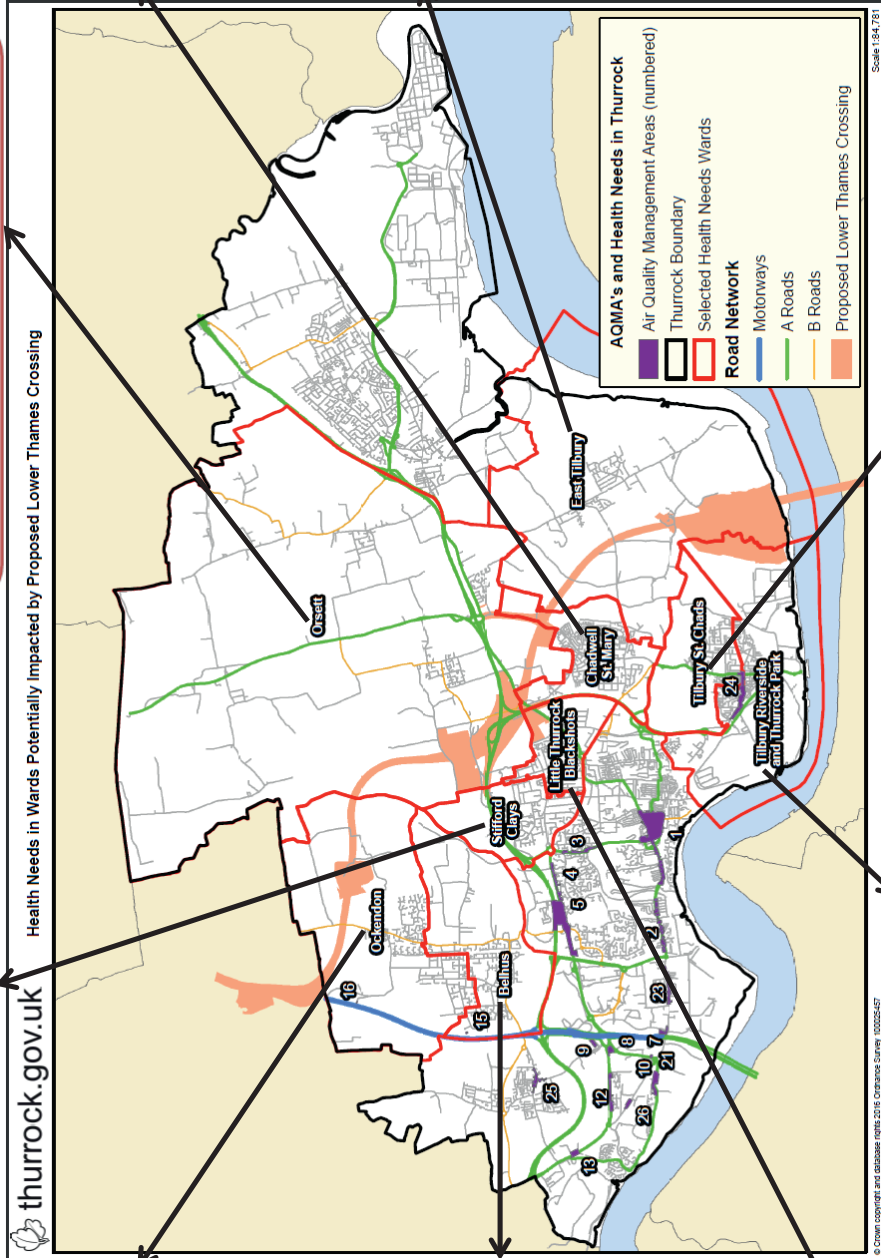
Orsett Key Health Concerns:-

Chadwell St Mary Key Health Concerns:-

- Life expectancy for males is 77 years. This is significantly lower than the England (79.4 years) average.
- Life expectancy for females is 80.3 years. This is significantly lower than both the Thurruck (82.5 years) and England (83.1 years) average.
- Premature deaths from cancer across all ages (132.8 SMR) and respiratory condition (all ages) - 142.1 SMR are significantly higher than the England (100) average.
- Emergency hospital admissions for COPD - the SAR is 144.3 which is significantly higher than the national average (100).

East Tilbury Key Health Concerns:-

- Population - 21.4% are aged 0-15 and 13.1% are aged 65+. There are significantly higher numbers of children in East Tilbury than the national average (19%).
- Emergency hospital admissions for COPD - The SAR is 147.3 which is significantly higher than the England (100) average.
- Social isolation - 22.2% of people living in this ward experience social isolation.
- Obesity - 29.3% of adults; 7% of 4-5 year olds and 19.4% of 10-11 year olds are obese.



Scale: 1:94,781
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Tilbury St Chads Key Health Concerns:-

- Life expectancy for males in Tilbury St Chads (76.3 years) is significantly lower than Thurruck (79.1 years), and national (79.4 years) average.
- Life expectancy for females in Tilbury St Chads (80 years) is significantly lower than the national average.
- In Tilbury St Chads premature deaths from Coronary Heart Disease for all ages (223.2 SMR) is significantly higher than the Thurruck (114.9) and National (100) averages.
- There is a significantly higher percentage of people with an LTC residing in Tilbury St Chads than the national (17.6%) average.

Tilbury Riverside & Thurrock Park Key Health Concerns:-

- 40.2% of children are living in poverty which is significantly higher than the Thurruck (21.8%) and national (19.9%) averages.
- Deaths and early deaths from circulatory disease (all ages) and respiratory disease deaths are significantly higher than the Thurruck and national averages in this ward.
- The percentage of people living in Tilbury Riverside and Thurrock Park (39.1%) living in social isolation is significantly higher than the Thurruck (31.9%) and National (31.5%) averages.
- Tilbury Riverside and Thurrock Park (36.6) has a significantly higher IMD score than Thurruck (21.6) and the national (21.8) averages.

Ockendon Key Health Concerns:-

- 18.1% of population have an LTC which is higher than the Thurruck and England averages (15.6% and 17.6% respectively).
- 24.4% of children are living in poverty which is significantly higher than both Thurruck (21.8) and England (19.9%) averages.
- Deaths and early deaths from conditions which could be prevented as measured by SMR - Cancer (all ages) - 132 and CHD (all ages) - 136.5 SMR are significantly higher than the national (100) average.
- Emergency hospital admissions for COPD - The SAR is 148.1 which is significantly higher than the national (100) average.

Belhus Key Health Concerns:-

- 30.2% of adults; 9.9% of 4-5 year olds and 26.3% of 10-11 year olds are obese. The percentage of 10-11 year old children who are obese is significantly higher than the national (19.3%) average.
- Premature deaths from all causes - The SMR for deaths in under 75's is 132.1 which is significantly higher than both the Thurruck (103) and England (100) averages.
- Deaths or early deaths from conditions that could be prevented - cancer (under 75's) and CHD (all ages) are significantly higher than the Thurruck and national averages.
- 25.2% of children are in poverty which is significantly higher than the Thurruck (21.8) and national (19.9%) averages.

Little Thurrock Blackshots Key Health Concerns:-

- Population - 18.6% are aged 0-15 years and 21.3% are aged 65+. There is a significantly higher number of people aged 65 and over living in this ward than the Thurruck (13.8%) and England (17.7%) averages.
- Limiting long term illness/disability - 18.4% of people in this ward which is significantly higher than the Thurruck (15.6%) average.
- Poverty - 15.1% of children live in poverty.
- Social isolation - 29.4% of people living in this ward experience social isolation.



27 November 2017

Gail Boyle
3D Eagle Wing
Temple Quay House
2 The Square
Bristol, BS1 6PN

Transport for London
City Planning

9th Floor
5 Endeavour Square
Westfield Avenue
Stratford
E20 1JN

Phone: 020 3054 7093
www.tfl.gov.uk

Dear Gail,

**Planning Act 2008 (as amended) and The Infrastructure Planning
(Environmental Impact Assessment) Regulations 2017 (the EIA Regulations) –
Regulations 10 and 11
Proposed application by Highways England (the Applicant) for an Order
granting Development Consent for the Lower Thames Crossing – Scoping
Report**

I refer to your letter dated 3rd November 2017 regarding the Lower Thames Crossing (LTC) application. Transport for London (TfL) has been informally liaising with Highways England (HE) on the Scheme, in particular the traffic model, and will continue to do so. The comments below relate to the traffic modelling which would allow us to have confidence in the impacts reported within the Environmental Statement and Transport Assessment.

- The base year model with Local Model Validation Report should be in line with the WebTAG/DMRB criteria.
- TfL agree with the proposed modelled area outlined within paragraph 2.19 of the Scoping Report, however, would like to request further information on the detail of the network within the area. The traffic model should be suitable to examine the traffic impacts for East London as changes on the M25 would affect London traffic. The outputs should allow TfL to understand the impacts within London, e.g. specific forecast changes in flows, congestion and delays on all links on the Transport for London Road Network (TLRN), trunk roads, M25 on and around London's eastern boundary, especially the A127 which will be most directly impacted.

- TfL agree with the model years outlined within paragraph 2.19.2 of the Scoping Report which outlines 2026 (opening year), 2031, 2041, 2051 for both with and without LTC. Modelled periods should be at least weekday AM peak, weekday inter-peak and weekday PM peak.
- Paragraph 2.19.6 outlines that growth forecasts will reflect National Trip End Forecasts (NTEM). TfL believe that NTEM over forecasts highway traffic growth within London and would advise LTC to adopt the GLA forecast for population and employment growth and liaise with TfL on highway growth.
- Trip forecasts within London should reflect the TfL Highway Assignment Model (HAM) (version to be agreed; essentially the latest practical version which is available when the work is undertaken).
- TfL request that HE consult on a list of schemes to be included within the traffic modelling to ensure compatibility with TfL traffic modelling. Sensitivity tests should include the proposed Silvertown Tunnel and associated Blackwall user charging from 2023 (to be reviewed following the Development Consent Order (DCO) decision anticipated in 2018).
- The modelling should include examination of induced traffic effects.

We look forward to continuing to work with Highways England as the Scheme develops.

Yours sincerely,



Neil Chester
Consents and Environment Manager

From: [Stephen Vanstone](#)
To: [Lower Thames Crossing](#)
Cc: [Nicholas Saunders](#); [Trevor Harris](#); [Martin Thomas](#)
Subject: RE: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation
Date: 21 November 2017 12:09:35
Attachments: [Letter to stat cons Scoping & Req 11 Notification.pdf](#)

Good afternoon Michael/Gail,

I can confirm that Trinity House is content with the Scoping Report in connection with the above project.

I note that the Port of London Authority (PLA) will be consulted directly on all marine works and any risk mitigation measures should be agreed with the PLA in the first instance.

Kind regards,

Steve Vanstone
Navigation Services Officer

Navigation Directorate
Trinity House
Trinity Square
Tower Hill
London
EC3N 4DH

Tel: 0207 4816921
E-mail: stephen.vanstone@thls.org

From: Lower Thames Crossing [<mailto:LowerThamesCrossing@pins.gsi.gov.uk>]
Sent: 03 November 2017 12:18
To: Navigation
Cc: Thomas Arculus
Subject: TR010032 - Lower Thames Crossing - EIA Scoping Notification and Consultation

FAO Steve Vanstone, Navigation Services Officer

Dear Sir/Madam

Please see the attached correspondence on the proposed Lower Thames Crossing.

Please note the deadline for consultation responses is 01 December 2017 and is a statutory requirement that cannot be extended.

Kind Regards,

Michael Breslaw
EIA and Land Rights Advisor
Major Applications and Plans

The Planning Inspectorate, 3D, Temple Quay House, Temple Quay, Bristol BS1 6PN
Direct line: 0303 444 5063
Helpline: 0303 444 5000

Email: Michael.Breslaw@pins.gsi.gov.uk

Web: <https://infrastructure.planninginspectorate.gov.uk/> (National Infrastructure Planning)

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Development Management
Bexley Civic Offices
2 Watling Street, Bexleyheath,
Kent, DA6 7AT
020 8303 7777
www.bexley.gov.uk



m/r 17/02706/ALA

Direct Dial

020 3045 5840

y/r TR010032-000007

Date 4th December 2017

The person dealing with this matter is

Helen Acton

helen.acton@bexley.gov.uk

Ms. Gail Boyle,
Senior EIA and Lands Rights Advisor, on behalf of the Secretary of State,
The Planning Inspectorate,
3D Eagle Wing,
Temple Quay House,
2 The Square,
Bristol. BS1 6PN

Dear Madam,

Town and Country Planning Act 1990 and Planning Act 2008 (as amended)
The Infrastructure Planning (Environmental Impact Assessment) Regulations
2017- Regulations 10 and 11

Application by Highways England for an Order granting Development Consent for
the Lower Thames Crossing.

Scoping consultation

I refer to your letter dated 3rd November 2017 regarding the scoping opinion in respect of the development at the Lower Thames described above. You have asked for the views of this Authority as a consultee.

- I can advise you that this Authority has no comments to make on the scope of the environmental statement.
- Bexley has been involved in pre-application discussions with, and provided data to, the applicant's team as the highway network included in the Lower Thames Area Model that will be used to assess the strategic demand and assignment impacts of the proposal (LTC V3) includes Bexley Council's highway network.

Accordingly, whilst there are no specific comments to be made on the submitted Scoping Report, this Council hereby registers its desire to be consulted in the future to consider and respond on the predicted impacts as the DCO process progresses.

Yours sincerely

Robert Lancaster
Head of Development Management

