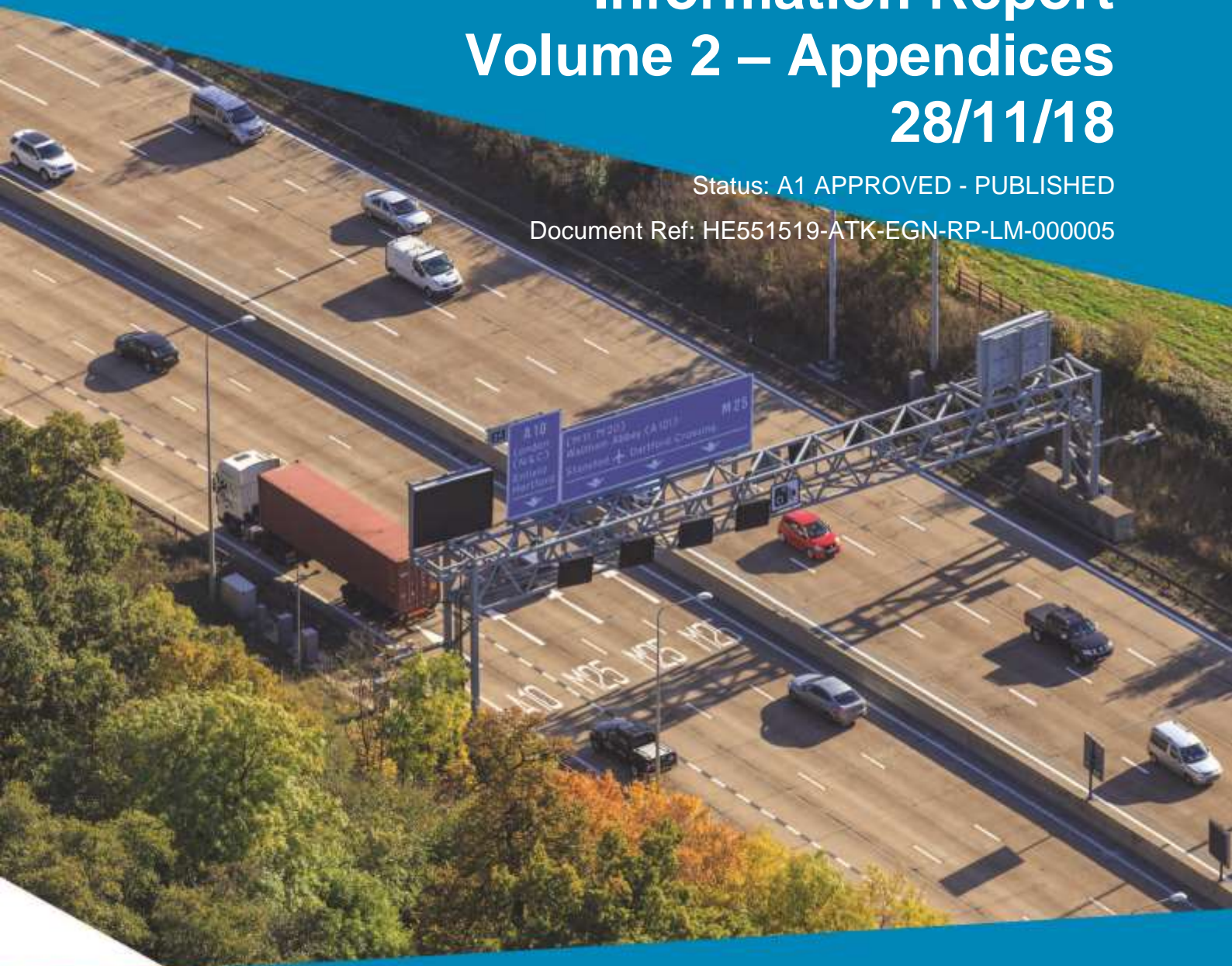


Regional Investment Programme M25 Junction 25 Improvements Preliminary Environmental Information Report Volume 2 – Appendices 28/11/18

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Appendices

Appendix A. General Scheme Legislation and Policy

A.1 Legislation and policy framework

Planning Act 2008 and The Infrastructure Planning (Environment Impact Assessment) Regulations 2017

- A.1.1 The Planning Act 2008 introduced a new approval route for Nationally Significant Infrastructure Projects (NSIPs). When promoting new schemes, the first step is to determine if a scheme meets the definition of a highways NSIP, that would then require Secretary of State consent through the Planning Inspectorate (PINS).
- A.1.2 The definition of a highways NSIP is set out in Section 22 of the Planning Act 2008, as amended by the Highway and Railway (Nationally Significant Infrastructure Project) Order 2013, and includes construction of a highway where the Secretary of State will be the Highway Authority for the highway, or the highway is to be constructed for a purpose connected with a highway for which the Secretary of State is or will be the highway authority, and where the construction or alteration of the highway, other than a motorway, where the speed limit for any class of vehicle is expected to be 50 miles per hour or greater, is 12.5 hectares.
- A.1.3 The M25 Junction 28 Improvement Scheme fulfils these criteria and is therefore considered to be a NSIP.
- A.1.4 In March 2014, the European Parliament voted to adopt substantive amendments to the EIA Directive 2011/92/EU. These amendments made by EIA Directive 2014/52/EU were transposed into UK legislation in May 2017 as the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 and are relevant to this Scheme and the environmental topic assessments. This is irrespective of the vote to leave the EU following the referendum on the UK's membership, as EU legislation will be incorporated into UK legislation in the short to medium term.
- A.1.5 As the Scheme is likely to have significant environmental effects, an EIA will be undertaken and reported in a statutory ES to be submitted to the Planning Inspectorate with the DCO application for Scheme. A Regulation 6 Notification under the provisions of the Planning Act 2008 has been submitted to the Planning Inspectorate informing the Secretary of State that an ES will accompany the DCO application.
- A.1.6 Under the Planning Act 2008 it is a mandatory requirement to seek a screening opinion from the Secretary of State or to notify the Secretary of State of the intent to undertake an Environmental Impact Assessment (EIA).
- A.1.7 Schedule 3 of the EIA Regulations provides screening criteria which include the characteristics of the development, the location of the development with regard to environmentally sensitive receptors and characteristics of the potential impact. The Scheme is not a project where a mandatory EIA is required, as defined in Annex 1 of the EIA Directive or Schedule 1 of the EIA Regulations. However, it is

considered to be an Annex II (or Schedule 2) scheme where the need for a Statutory EIA and the publication of an ES is identified through an assessment of the significance of the likely environmental effects of a project.

A.1.8 At a national level, the National Networks National Policy Statement (NN NPS) is the basis for decision making on nationally significant transport schemes. The National Planning Policy Framework (NPPF) is also an important and relevant consideration in decision making.

A.1.9 Local and regional planning policy is also relevant as it will form the basis for local impact reports. At the local level of policy making the Scheme lies on the boundary between two local planning authorities and thus some of the planning policies in both administrative areas are therefore applicable. Key regional and local policy relevant to the Scheme includes the following:

- The London Plan (adopted 2016) - the spatial development strategy for London produced by the Mayor of London;
- The Essex Local Transport Plan (2011) -published by Essex County Council in August 2011 which sets out the long-term approach to transport in the county;
- The Essex County Council and Southend-On-Sea Borough Council Waste Local Plan (adopted 2017) – this Plan seeks to ensure both Essex and Southend-On-Sea have good provision to deal with waste arisings to reduce damage to the environment and provide the best possible quality of life;
- Havering Core Strategy and Development Control Policies Development Plan Document (DPD) was adopted in 2008. The Havering Local Plan is in preparation and will eventually replace the DPD. Examination of the Draft Local Plan is scheduled for Winter 2017/18 with adoption anticipated in Spring 2018;
- The Brentwood Replacement Local Plan - adopted in 2005. Certain polices from this plan have been ‘saved’ and therefore currently form part of the planning policy framework in Brentwood. A new Local Plan is currently being prepared which will supersede these policies; and
- Supplementary Planning Documents (SPDs) – These documents expand or add details to policies laid out in Local Plans. The London Borough of Havering has produced SPDs, several of which contain guidance relevant to the Scheme.

A.1.10 Relevant policies contained with the national, regional and local documents identified above are set out in each of the topic chapters of this PEIR.

A.2 Policy overview

Table A.1: Planning Policy

Scale	Policy Document	Key Considerations for the Scheme
National	Road Investment Strategy (2014)	Promote safe movement, satisfy users of the network, support efficient movement, improved environmental outcomes, support local access and well-being and be demonstrably cost effective
	Highways England Business Plan	Support short-term targets as well as long-term aspirations and not significantly impact on network availability
	National Policy Statement on National Networks	Identifies that there is a critical need to address road congestion and provide safe, expeditious and resilient networks that should be designed to minimise social and environmental impacts and improve quality of life.
	National Planning Policy Framework	Advises that local authorities should take account of the need for strategic infrastructure, including nationally significant infrastructure within their areas.
Regional	South East England Strategic Economic Plan	Enable local housing and employment growth in Essex and the wider South East by supporting efficient movement along the A12 and M25
	London Plan	Enable targets for employment and housing growth in outer London by providing efficient access to the M25
	Mayor's Transport Strategy	Support the smooth and efficient movement of traffic along the A12 to the west of the M25
Local	Essex Local Transport Plan (2011)	Manage the impacts of traffic on the local community, support access to strategic locations in Essex along the A12 corridor and support multimodal access for Brentwood
	Brentwood Local Plan	Ensure improvements are consistent with land use and environmental constraints and help to deliver local aspirations for housing and employment growth.

Appendix B. Not used

Appendix C. PINs Scoping Opinion Comments Log of Responses

- C.1.1 The Environmental Scoping Report was published on the Planning Inspectorate (PINS) website in November 2017. A Scoping Opinion was received from PINS in December 2017 based on feedback from statutory consultation bodies. A response from Highways England to the Scoping Opinion comments from PINS is included in Table 3.1 below. Detailed feedback from the statutory consultation bodies included in the Scoping Opinion from PINS are being considered as part of this Preliminary Design Stage and will be addressed in the ES.

Table C.1: PINS Scoping Opinion comments log with responses

PINS Scoping Comment	Highways England Response
<p>Chapter 2 Section 2.5 of the Scoping Report provides a brief description of the main components of the Proposed Development. The Inspectorate expects that at the point of application the ES should include a detailed description of the Proposed Development which includes all of the works for which development consent is sought.</p>	<p>Further detail will be provided in the ES of the main components of the development.</p>
<p>Chapter 2 The length of the scheme (in km) and the size of the proposed DCO application site (in hectares) are not given in the Scoping Report and this information must be specified in the ES. Details of other components such as signage, gantries, lighting, drainage features, and environmental mitigation features have not been specified in the Scoping Report and this information should also be provided in the ES.</p>	<p>Further details of the length of the scheme (in km) and the size of the proposed DCO application site (in hectares) will be provided in the ES. Description of mitigation measures has been mentioned under individual chapters of the PEIR report. Road drainage has been briefly described under section 8.2 of the PEIR. Further details of other components such as signage, gantries, lighting, drainage features, and environmental mitigation features will be provided in the ES.</p>
<p>Chapter 2 The text in Table 1.1 directs the reader to Appendix A of the Scoping Report for information regarding land use during construction; however the figures in the appendix do not illustrate temporary and permanent land-take. The ES should clearly identify the land that would be required temporarily during construction (eg the location of construction compounds, material stockpiles, borrow pits, and haul roads), as well as the land that would be required for the operational phase. The proposed DCO boundary applied for must allow for the land-take associated with all works and project elements proposed as part of the application, including requisite demolition works, drainage features, and mitigation areas.</p>	<p>Further details will be provided in the ES of the land that would be required temporarily during construction (eg the location of construction compounds, material stockpiles, borrow pits, and haul roads), as well as the land that would be required for the operational phase.</p>
<p>Chapter 2</p>	<p>Further details of the extent of the works within the DCO boundary will be included in the PEIR.</p>

PINS Scoping Comment	Highways England Response
<p>The Inspectorate notes that the Preliminary DCO Boundary shown on Figure A-2 of the Scoping Report extends approximately 2km south of Junction 28 along the M25. It is not clear from the description in the Scoping Report if permanent works or temporary activities (eg traffic management measures associated with the construction phase) are proposed within this area. Similarly, the Preliminary DCO Boundary extends around an existing overhead electricity transmission line (identified on Figure A-2 of the Scoping Report) but any works in this location are not explained in the Scoping Report.</p>	<p>The boundary extends 2 km south of Junction 28 for the inclusion of new signage on the gantries. However, the gantries will not be removed.</p> <p>The boundary extends around the electricity transmission line to the north of the Scheme to allow for any changes to the transmission line if required.</p>
<p>Chapter 2</p> <p>Where flexibility is sought, the ES should set out the parameters that would apply for all components of the Proposed Development, where applicable setting out clearly any proposed limits of deviation. This should include the footprint and heights of structures and permanent earthworks such as embankments (taking account of existing ground levels), as well as land-use requirements for all phases and elements of the development. The description should be supported by appropriate figures/drawings which should be clearly and appropriately referenced in the ES. Further advice on flexibility is provided below.</p>	<p>A detailed description will be provided in ES.</p>
<p>Chapter 2</p> <p>The ES should describe any anticipated phased approach to construction, including the likely duration and location of construction activities. The Inspectorate notes the information in paragraph 2.5.7 of the Scoping Report regarding the anticipated year of construction and operation and would expect this to be incorporated consistently into the ES, in particular where construction year, opening year, and design year assessment scenarios are presented. Construction traffic routing and anticipated numbers/types of vehicle movements (for example to move excavated material noting the volume estimated in paragraph 2.5.6 of the Scoping Report) should be described, with sufficient detail to enable a robust assessment in the ES.</p>	<p>A detailed description will be provided in ES.</p>
<p>Chapter 2</p>	<p>A detailed description will be provided in ES.</p>

PINS Scoping Comment	Highways England Response
<p>The ES should include a description of the nature and quantity of the materials and natural resources (including water, land, soil and biodiversity) to be used during construction. The ES should describe and assess the impacts associated with any particular technologies or substances proposed to be used for the construction phase.</p>	
<p>Chapter 2 The Scoping Report provides a brief description of the location of the Proposed Development, and an overview of footways and other nonmotorised routes in the vicinity. The Inspectorate would expect a section in the ES which summarises the site and surroundings, to provide the context of the Proposed Development. The ES should provide a detailed description of the existing land uses and features across the land to which the proposed DCO application relates and surrounding area, and this information should be applied to the relevant aspect assessments where relevant.</p>	<p>A detailed description will be provided in ES.</p>
<p>Chapter 2 The Scoping Report and the accompanying environmental constraints plan (Figure A-1, Appendix A of the Scoping Report) identify a number of landscape, historic, ecological, and other features in the vicinity of the Proposed Development. These features are not individually identified or referenced and it would provide greater clarity and assist future consultation to do so. The figures presented in the ES should be prepared accordingly.</p>	<p>Appendix A in the scoping report shows the surrounding key environmental features of the project site and the brief description of the same has been described in section 2.3 of the PEIR report. Further details of the Environmental Constraints will be described in the ES.</p>
<p>Chapter 3 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.</p>	<p>This has been provided in Chapter 3 in the PEIR. However, a more detailed description of the alternatives will be provided in ES.</p>
<p>Chapter 3 Chapter 3 of the Scoping Report ('Alternatives') sets out the approach taken in developing options for the Proposed Development. This chapter provides an overview of the options and the reasoning behind the chosen option. Paragraph 3.2.6 refers to an environmental</p>	<p>This has been provided in Chapter 3 in the PEIR. However, a more detailed description of the alternatives will be provided in ES.</p>

PINS Scoping Comment	Highways England Response
<p>assessment of the options undertaken to inform the decision, however no details of this assessment are provided. The ES should include this information not least so that it can be understood how environmental effects, and the responses of stakeholders, have been taken into account in the choices made</p>	
<p>Chapter 4 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.</p>	<p>Mitigation measures is provided in each topic chapter. Further detailed descriptions of mitigation measures will be provided in ES.</p>
<p>Chapter 4 General The Inspectorate recommends that in order to assist the decision-making process, the Applicant uses tables: a</p> <ol style="list-style-type: none"> a. to demonstrate how the assessment has taken account of this Opinion; b. to identify and collate the residual effects after mitigation for each of the specialist aspect chapters, including the relevant interrelationships and cumulative effects; c. to set out the proposed mitigation and/or monitoring measures including cross-reference to the means of securing such measures (eg a dDCO requirement); and d. d. to describe any remedial measures that are identified as being necessary following monitoring. 	<ol style="list-style-type: none"> a. This is included in Volume 2 Appendix C. b. This will be included in the ES. c. This is included in the PEIR under each topic where relevant and will be included in the ES. d. This will be included in the ES.
<p>Chapter 4 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</p>	<p>This is noted - the proposed development is described in the PEIR Chapter 2 and this will be included in the ES and written to reflect PINs requirements.</p>

PINS Scoping Comment	Highways England Response
<p>the benefit of giving greater confidence to the Inspectorate that what is proposed is not in fact an additional NSIP defined in accordance with s22 of the PA2008.</p>	
<p>Chapter 4 The Inspectorate notes that it is proposed in Chapter 4 to assess impact to human health in the Air Quality, Noise, Road Drainage and Water Environment, and People and Communities aspect areas. The Inspectorate has had regard to the information provided in the Scoping Report and has taken into account the nature and characteristics of the Proposed Development and is generally content with this approach. The Inspectorate agrees with points raised by the Health and Safety Executive that impacts to human likely to result from proposals relating to existing infrastructure must be assessed in the ES. The assessment should have particular regard to the existing railway, overhead electricity line, the historic landfill site north west of the Junction, and the gas pipelines shown on Figures A-1 and A-3 of the Scoping Report.</p>	<p>This is noted and will be incorporated in ES.</p>
<p>Chapter 4 The Inspectorate also recognises that the existing infrastructure presents a challenging constraint to the design of the Proposed Development and potentially to the powers required in the dDCO and therefore on the information on which the EIA will be based. The Inspectorate advises that interactions between the Proposed Development and existing infrastructure assessed are fully explained and assessed in the ES. The LBH have raised points in this regard in their response in Appendix 2 of this Scoping Opinion.</p>	<p>This is noted and will be fully assessed in the ES.</p>
<p>Chapter 4 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 Inspectorate notes that a Transport chapter is not included in the draft structure of the ES presented in the Scoping Report. LBH and Essex County Council (ECC) have noted the absence of information regarding anticipated traffic levels. The Inspectorate considers that the ES must clearly explain where the</p>	<p>A Transport Assessment will be included in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>information gathered as part of the traffic assessment (including traffic modelling and baseline transport information) is applied to other aspect assessments within the ES, for example Air Quality, Noise and Vibration, and People and Communities.</p>	
<p>Chapter 4 The ES should assess the impacts from proposed construction traffic management measures including any road closures or diversions. Royal Mail Group Ltd have provided comments in this regard along with information on their operations in the area which could have a bearing on this assessment.</p>	<p>The ES will include an assessment of the impacts from construction traffic.</p>
<p>Chapter 4 The approach to the EIA is outlined in Chapter 4 of the Scoping Report, and paragraph 4.6.1 states that decommissioning effects are not considered relevant to the Proposed Development. Paragraph 2.5.9 of the Scoping Report states that the Proposed Development will have an indefinite design life and also states that decommissioning will not be included in the ES. The Inspectorate considers that this is a reasonable approach taking into account the specific characteristics of the Proposed Development as a whole. However, the Inspectorate considers that any decommissioning associated with dismantling and replacing particular elements of the Proposed Development once they reach the end of their design life should be assessed where significant effects are likely to occur.</p>	<p>Details of decommissioning will be included in the ES.</p>
<p>Chapter 4 Notwithstanding the comments above regarding decommissioning, the Applicant should ensure that any potential significant effects from any demolition or removal of existing structures to enable the Proposed Development are assessed within the ES.</p>	<p>This is noted and will be incorporated in ES.</p>
<p>Chapter 4 It is noted from the Scoping Report that an assessment under the Habitats and Species Regulations 2017 is unlikely to be required. The Inspectorate considers that an up to date HRA screening report should be produced (the Inspectorate notes the assessment referred</p>	<p>A Habitats Regulations Assessment will be produced and included in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>to in Chapter 4) and should be referenced in the ES. The HRA report should in turn contain references to where the information on which it is based can be found in the ES.</p>	
<p>Chapter 4 Throughout the Scoping Report, reference is made to ‘the Scheme,’ ‘the project’, ‘the construction site’, ‘the red line boundary’, and ‘the Site’. Some of these terms appear to be used interchangeably. This is of particular relevance to understanding the study areas applied and how the relevant baseline information has been captured, and therefore understanding the basis of the assessments of the likely significant effects of the Proposed Development. The ES should apply terminology used carefully in order to preserve the distinction between terms and aid clarity.</p>	<p>Noted. This will be updated in the PEIR and ES.</p>
<p>Chapter 4 – Baseline Scenario The ES should include a description of the baseline scenario with and without implementation of the development as far as natural changes from the baseline scenario can be assessed with reasonable effort on the basis of the availability of environmental information and scientific knowledge.</p>	<p>This is reported in each topic chapter in the PEIR and will be also reported in the ES.</p>
<p>Chapter 4 – Baseline Scenario The Inspectorate notes the information within section 4.6 of the Scoping Report which sets out the temporal scope of the assessments. Key terminology including ‘do-minimum scenario’ and ‘do-something scenario’ is introduced, however only the ‘do-minimum’ is defined. Reference is made to the use of baseline year and future baseline years of assessment but exact scenarios are not committed to in the Scoping Report. The final approach adopted should be defined in the ES and based on the most up to date anticipated project timescales. The approach must be adopted consistently across each aspect chapter of the ES. Where any individual aspect assessments depart from that approach it should be explained in the ES.</p>	<p>This is has been detailed in the PEIR section 4.6 and will also be reported in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>Chapter 4 - Forecasting methods or evidence</p> <p>The ES should contain the timescales upon which the surveys which underpin the aspect assessments have been based. For clarity, this information should be provided either in the introductory chapters of the ES (with confirmation that these timescales apply to all chapters), or in each aspect chapter.</p>	<p>The surveys and their timing have been include in the PEIR and will be included in the ES.</p>
<p>Chapter 4 - Forecasting methods or evidence</p> <p>The methodology set out in section 4.5 of the Scoping Report is noted. The Inspectorate expects the ES to include a chapter setting out the overarching methodology for the EIA, which clearly states which effects are 'significant' and 'non-significant' for the purposes of the EIA. Any departure from that methodology should be described in individual aspect assessment chapters.</p>	<p>The EIA methodology is described in Chapter 4 of the PEIR and will also be included in the ES.</p>
<p>Chapter 4 - Forecasting methods or evidence</p> <p>The Inspectorate recommends that the Applicant fully describes and justifies in the ES the methodologies they have used for the assessments, in particular where these depart from standard guidance or where no standard guidance exists. The Inspectorate considers that the ES should present the specific assessment methodology relevant to each individual aspect/matter assessed. If an overarching methodology is applied this should be explained with relevant cross reference, and any departures from the prescribed methodology should be explained and justified. It would also be of benefit to provide figures in the ES that show the extent of the study areas used for the assessments and identify the receptors. The Inspectorate considers that relevant survey data which inform the assessments should be appended to the ES.</p>	<p>The ES methodologies are described in each topic chapter of the PEIR and will also be included in the ES.</p>
<p>Chapter 4 - Forecasting methods or evidence</p> <p>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.</p>	<p>A section has been included in the PEIR – Dealing with uncertainties section 4.11 and will be included in the ES and details of this will be included in each topic chapter.</p>

PINS Scoping Comment	Highways England Response
<p>Chapter 4 – Residues and emissions</p> <p>The EIA Regulations require an estimate, by type and quantity, of expected residues and emissions. Specific reference should be made to water, air, soil and subsoil pollution, noise, vibration, light, heat, radiation and quantities and types of waste produced during the construction and operation phases, where relevant. This information should be provided in a clear and consistent fashion and may be integrated into the relevant aspect assessments.</p>	<p>Residues and Emissions will be assessed and reported in the ES.</p>
<p>Chapter 4 – Residues and emissions</p> <p>The Inspectorate notes the proposal at paragraph 4.12 of the Scoping Report to scope out heat and radiation according to the Applicant’s conclusion that they are not relevant due to the characteristics of the proposed scheme. The Inspectorate has taken into account the nature and characteristics of the Proposed Development and agrees that significant effects resulting from heat and radiation are unlikely to arise and therefore agrees that this aspect may be scoped out.</p>	<p>Noted.</p>
<p>Chapter 4 – Mitigation</p> <p>Any mitigation relied upon for the purposes of the assessment should be explained in detail within the ES. The predicted significance of effects both prior to and following the implementation of proposed mitigation measures should be identified. The likely efficacy of the mitigation proposed should be explained with reference to residual effects. The ES should also address how any mitigation proposed is secured ideally with reference to specific DCO requirements or other legally binding agreements.</p>	<p>A mitigation and residual effects section is included in each topic chapter of the PEIR that will also be included in the ES.</p>
<p>Chapter 4 - Vulnerability of the development to risks of major accidents and/or disasters</p> <p>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</p>	<p>This is included in Chapter 4 of the PEIR and major accidents and disasters will be discussed further in the ES.</p> <p>A methodology for assessing the Schemes vulnerability to the baseline climate as well as its vulnerability to a range of possible climate futures is included in Chapter 14. Reference to this Chapter and extreme weather events that may be more common or of greater magnitude in the future is included in Section 4.11.2: “With regard to naturally occurring events the major accidents and disasters assessment will build on the climate vulnerability assessment presented in</p>

PINS Scoping Comment	Highways England Response
<p>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.</p>	<p>Chapter 14 to consider how climate change may impact the study areas current climatic baseline”.</p>
<p>Chapter 4 - Vulnerability of the development to risks of major accidents and/or disasters</p> <p>The Inspectorate notes that it is proposed in Chapter 4 Section 4.13 of the Scoping Report not to provide a separate chapter in the ES on major accidents and disasters but that major events will be reported in relevant aspect chapters. It is noted that there is a commitment to assess the vulnerability of the Proposed Development to major accidents and disasters, and how such events could change the predicted environmental effects. The Scoping Report does not address the potential for the Proposed Development to lead to or exacerbate major accidents or disasters. If the Proposed Development could lead to or exacerbate a major accident or disaster this must be assessed in the ES. The Inspectorate notes the proximity of the Proposed Development to existing railway, overhead electricity line, and a high-pressure gas main infrastructure which may be a relevant consideration. The ES should assess these impacts within relevant aspect chapters.</p>	<p>Added in section in Chapter 4 of the PEIR and this will be discussed further in the ES.</p>
<p>Chapter 4 - Transboundary effects</p> <p>Schedule 4 part 5 of the EIA Regulations requires a description of the likely significant transboundary effects to be provided in an ES. The Inspectorate notes that the Applicant has indicated in the Scoping Report that the Proposed Development is unlikely to have significant impacts on another European Economic Area (EEA) State.</p>	<p>This is included in Chapter 4 of the PEIR and will also be included in the ES.</p>
<p>Chapter 4 - Transboundary effects</p> <p>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</p>	<p>This is included in Chapter 4 of the PEIR and will also be included in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>environment of another EEA state, and where relevant, to consult with the EEA state affected.</p>	
<p>Chapter 4 - Transboundary effects The Inspectorate considers that where Regulation 32 applies, this is likely to have implications for the examination of a DCO application. The Inspectorate recommends that the ES should identify whether the Proposed Development has the potential for significant transboundary impacts and if so, what these are and which EEA States would be affected.</p>	<p>This is reported in the PEIR under Section 4.11 and will also be included in the ES.</p>
<p>Chapter 4 - A reference list A reference list detailing the sources used for the descriptions and assessments must be included in the ES. The Inspectorate notes the inclusion of a reference list in Chapter 18 of the Scoping Report organised by chapter and welcomes this approach.</p>	<p>This is noted and is included in the PEIR and will be included in the ES.</p>
<p>Air Quality 5.4.4 Pollutants The Scoping Report states that national assessments have demonstrated that there is no risk of exceedance of the air quality objectives set for 1,3-butadiene, benzene, carbon monoxide, lead or sulphur dioxide due to traffic emissions anywhere in the UK, and therefore no further assessment is intended. The Inspectorate agrees with the reasoning in the Scoping Report that significant effects associated with these pollutants are unlikely and is content for further assessment to be scoped out of the ES</p>	<p>Noted.</p>
<p>Air Quality Pollutants The Scoping Report does not state if/how impacts resulting from increased PM_{2.5} emissions will be taken into account. The Inspectorate considers that the ES should include an assessment of impacts associated with increased PM_{2.5} resulting from the Proposed</p>	<p>PM_{2.5} is included within the existing conditions section of the PEIR. It will also be included within the existing conditions section of the ES along with a consideration of the effect of the scheme on PM_{2.5} concentrations.</p>

PINS Scoping Comment	Highways England Response
<p>Development. In determining significance, the assessment should take into account performance against relevant target/limit values</p>	
<p>Air Quality 5.4.5 Ecological receptors It is noted that only internationally and nationally designated sites are identified as sensitive receptors. The Applicant should additionally assess locally and nondesignated sites that could be significantly affected by the Proposed Development. The Inspectorate recommends that the relevant ecological receptors to be included in the assessment should be agreed with NE and the local planning authorities.</p>	<p>Natural England and local authorities will be consulted regarding receptors to include within the air quality assessment for the ES.</p>
<p>Air Quality 5.2.1 and 5.2.2 Study area ‘Construction site area’ – the meaning of this term is unclear. The study area applied to the construction dust assessment must be clearly described in the ES. The study area should be appropriate with regards to the extent of the DCO. With respect to the assessment of construction traffic and operational traffic emissions, the ARN for the local and regional assessments must be clearly defined in the ES. ECC has provided advice regarding the roads to be included in the transport assessment which should be given regard with respect to the assessment of air quality effects.</p>	<p>The text regarding the construction site area has been amended for the PEIR to improve clarity.</p>
<p>Air Quality Figure B-1 Monitoring locations The Scoping Report refers to a number of monitoring locations which are not depicted on the accompanying figure as stated. The ES must include a description of each monitoring location and depict them on a clearly legible figure(s). The LBH has provided information in their consultation response on monitoring locations along the A12 which</p>	<p>The figure showing monitoring locations has been updated for the PEIR. We will contact LBH regarding the monitoring locations on the A12 when we start to prepare the ES.</p>

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<p>could be used to inform the assessment. The Applicant should make effort to agree monitoring locations with consultees.</p>	
<p>Air Quality 5.7.5 Significance of construction dust effects It is unclear how the significance of effects will be determined. In the absence of appropriate guidance, such as exists for local air quality effects in the form of IAN 174/13, this should be assessed using an evidence-based methodology, and described in the ES. The Applicant should seek agreement with the Local Planning Authorities on the methodology for determining significance of effects.</p>	<p>The Design Manual for Roads and Bridges Volume 11, Section 2, Part 5, HA 205/08 paragraph 2.9 notes that significance of effect should be assigned after consideration of the effectiveness of the design and committed mitigation measures, i.e. significance is assigned with mitigation in place allowing for the positive contribution of all mitigation that is deliverable and committed. There is therefore unlikely to be a significant effect on air quality arising from the construction of the Scheme as any effects would be temporary and suitably minimised by the application of standard mitigation measures.</p>
<p>Noise 1 6 6.2 6.7 Table 17.1 Noise and vibration The proposed approach to the assessment of noise and vibration in the Scoping Report does not specifically address how and when vibration impacts will be assessed. The ES should include an assessment of vibration impacts where such impacts may result in significant effects. The assessment should address impacts that derive from construction and operational activities.</p>	<p>This will be included in the ES.</p>
<p>Noise 6.3.11 6.3.12 The Lowest Observed Adverse Effect Level (LOAEL) and Significant Observed Adverse Effect Level (SOAEL) LOAEL and SOAEL should be defined for all of the construction and operational noise and vibration parameters assessed. Mitigation measures should be set out accordingly.</p>	<p>This will be included in the ES.</p>
<p>Noise 6.4.10 Noise survey Noise surveys should be undertaken to a recognised standard e.g. BS7445-1:2003 and monitoring locations should be agreed with the</p>	<p>Noted. This will be included in the ES.</p>

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<p>relevant local planning authority. Survey results should be reported as part of the assessment in the ES.</p>	
<p>Noise 6.6.4 Detailed noise modelling The Applicant should set out the noise modelling software and all modelling assumptions within their ES.</p>	<p>This will be included in the ES.</p>
<p>Noise 6.7 BS5228:2009+A1:20 14 The Applicant states that the BS5228 methodology will be applied but does not state which of the Annex E assessment methods will be adopted. This should be agreed with relevant consultees and the information should be provided in the ES.</p>	<p>This will be discussed with consultees and included in the ES.</p>
<p>Noise 6.10.2 6.10.5 Mitigation The Scoping Report indicates that new roadside noise barriers or extension of existing noise barriers may be required as mitigation against increased noise levels during construction and operational phases. The ES should explain the location(s) where noise barriers will be installed as well as the dimensions of any proposed barriers or extensions to existing barriers where these are considered necessary.</p>	<p>If noise barriers are required to be installed, further details will be included in the ES.</p>
<p>Biodiversity Table 7.5 Internationally designated statutory sites (SAC, SPA, Ramsar) No internationally designated sites have been found within the study area. Given this, and the nature of the Proposed Development there appears to be limited potential for significant effects. However no information is provided in the Scoping Report regarding the nearest designated sites and particularly the presence of any hydrological linkages to the Proposed Development. The ES should present this</p>	<p>Noted. The ES will present information on internationally designated statutory sites (SAC, SPA, Ramsar) and provide a justification as to why no significant effects could occur.</p>

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<p>information and justification as to why no significant effects could occur. Without this information the Inspectorate cannot agree to scope these designations out of the assessment.</p>	
<p>Biodiversity Table 7.5 Nationally designated statutory sites (SSSI, NNR) The Applicant states that the Proposed Development will not affect nationally designated sites as none exist within 2km of ‘the Scheme’. The Inspectorate notes that there may be sites just outside this distance which could experience impacts from the Proposed Development, and sites within and without 2km which could be subject to indirect effects, for example, resulting from hydrological changes or air quality changes. The Inspectorate does not consider there to be sufficient justification in the Scoping Report for excluding significant effects, and advises that impacts on Nationally designated sites must be assessed in the ES.</p>	<p>Noted. Impacts on nationally designated sites will be assessed in the ES.</p>
<p>Biodiversity Table 7.5 Locally designated statutory sites The Applicant states that the Proposed Development will not affect LNRs as there are no LNRs subject to direct land take or immediately adjacent to the development. The Inspectorate considers that indirect impacts on The Manor LNR located 400m west of the development should be assessed, along with any other relevant locally designated statutory sites and does not agree to scope this out of the assessment.</p>	<p>Noted. Impacts on locally designated statutory sites will be assessed in the ES.</p>
<p>Biodiversity 7.5 Table 8.3, Chapter 8 Potential impacts The Inspectorate notes that an assessment of required floodplain compensation is likely due to the loss of existing floodplain storage. The ES should assess the impacts associated with the floodplain compensation proposals.</p>	<p>The ES will assess the impacts associated with the floodplain compensation proposals on biodiversity features.</p>

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<p>Biodiversity 7.5 7.7.5 Potential impacts</p> <p>High level information is presented in the Scoping Report about potential mortality or injury during construction. The risk of mortality or injury to protected/notable species during operation, for example badger and barn owl, is not mentioned and the Inspectorate considers that this should be assessed in the ES.</p>	<p>The risk of mortality or injury to protected/notable species during operation of the Scheme will be assessed in the ES.</p>
<p>Biodiversity 7.10 Potential mitigation measures</p> <p>The Inspectorate recommends that any proposed mitigation and monitoring measures are agreed as far as possible with relevant consultees including NE and the local planning authorities. The ES should detail all proposed mitigation measures and demonstrate how they will be secured. The Inspectorate notes and supports the commitment to the principles of ‘No Net Loss and Net Gain’ with regard to ecological compensation and enhancement. ECC have provided advice in their consultation response in Appendix 2 of this Opinion.</p>	<p>Noted. Proposed mitigation and monitoring measures will agreed as far as possible with relevant consultees including NE and the local planning authorities. The ES will detail all proposed mitigation measures for biodiversity features and demonstrate how they will be secured.</p>
<p>Biodiversity 7.11.1- 7.11.2 Field surveys</p> <p>The Scoping Report states that the Extended Phase 1 Habitat Surveys were undertaken from “safely accessible land adjacent to the highway network” and that the ecological surveys may have been limited by factors which could reduce their effectiveness. The Applicant should ensure that they have a comprehensive set of ecological surveys sufficient to inform the assessment. Where access or other limitations are encountered, these should be detailed within the ES along with an explanation of how these have been addressed and any remaining implications. The Applicant is referred to the powers available under section 53 of the Planning Act in regard to access for the purpose of surveys.</p>	<p>Noted. The ES will be based on the most comprehensive survey information available, and all limitations to survey work will be addressed so that a sufficient assessment of the impacts is carried out. Where limitations to access cannot be overcome then professional judgement will be applied to make accurate assumptions of the biodiversity value of a feature and potential for impacts based on knowledge of the features present and similar schemes. The implications of such assumptions will be made clear in the ES.</p>

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<p>Biodiversity 7.5.8 to 7.5.11 Protected species licensing</p> <p>The ES should confirm whether any EPS licenses and/or mitigation licenses for other protected species would be required. If so, assurance should be provided to the ExA that the necessary license(s) are likely to be obtained. The Applicant should seek to obtain letters of no impediment (LoNI) from Natural England. These should be appended to the ES. The Applicant is referred to the Inspectorate’s Advice Note 11, Annex C.</p>	<p>Noted. The ES will confirm whether protected species licences are required, and LoNI will be sought from NE.</p>
<p>Water Environment 8.4.9 WFD designated lakes</p> <p>The Applicant has identified no WFD designated lakes within the study area and therefore proposes to scope this matter out from the assessment. The Inspectorate is content that no impacts to WFD designated lakes are anticipated, subject to adequate justification in the ES in particular regarding the adequacy of the study area. The study area must be determined by the extent of the potential impacts.</p>	<p>The study area has been justified in the PEIR and is based on industry guidance (DMRB), with reference to potential impacts from a road scheme – i.e. a 1 km buffer around the scheme. There are no WFD lakes within the study area.</p>
<p>Water Environment 8.4.10 ‘Hydraulically isolated ponds’</p> <p>It is not clear from the Scoping Report how these ponds are isolated from surface water run-off. Changes in surface water run-off in terms of quantity and quality within the catchment of these ponds may be introduced by the Proposed Development and it is not explained how this has been considered. In the absence of this information the Inspectorate cannot agree to scope this matter out.</p>	<p>Confirm with ecology team and re-evaluate. Default position will be to include ponds within the study for the ES.</p>
<p>Water Environment 8.4.13 Source Protection Zones (SPZ)</p> <p>No Source Protection Zones (SPZ) are identified by the Applicant as being located within the study area and therefore the Applicant proposes to scope this matter out of the assessment. The</p>	<p>The study has been justified in the PEIR and is based on industry guidance (DMRB), as above. There are no SPZs within this area.</p>

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<p>Inspectorate is content that no significant effects could occur, subject to adequate justification in the ES in particular around the adequacy of the study area. The study area must be adequate to capture the extent of potential impacts.</p>	
<p>Water Environment 8.4.20 Statutory designated sites The Applicant proposes to scope out an assessment of impacts on statutory designated sites resulting from changes in the hydrological regime. The Applicant states that they will not consider designated sites further in the context of water resources. The points made above (Table 4.3, ID 1-3) are relevant here and the Inspectorate would expect cross reference between the relevant aspect chapters of the ES in providing justification as to why no likely significant effects are anticipated on statutory designated sites.</p>	<p>This is will be provided in the ES.</p>
<p>Water Environment 8.2.1 Study area The study area should be clarified in the ES with the water quality and flood risk areas clearly set out, supported by figures where appropriate. The study area must be adequate to capture the extent of potential impacts, both direct and indirect. The study areas should be agreed with the relevant consultees including the EA and the local planning authorities, and justified in the ES.</p>	<p>The study has been justified in the PEIR and is based on industry guidance (DMRB), as stated above.</p>
<p>Water Environment 8.4.5 Baseline conditions The Scoping Report acknowledges that desk study data is limited. The Applicant should engage with consultees in order to obtain information that will inform a robust baseline for the assessment. The Applicant’s attention is drawn to information in ECC’s response regarding surface water flood risk areas.</p>	<p>Consultation has been undertaken with the Environment Agency. Consultation with regulators (principally the Environment Agency and Lead Local Flood Authorities) will continue throughout the design process to ensure that the Scheme is designed to be compliant with the objectives of the WFD and that feasible opportunities for improvements to the water environment are integrated into the Scheme.</p>

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<p>Water Environment 8.4.21 8.7.3 8.12.3 Table 8.4 Methodology strategy</p> <p>In relation to the requirements of the WFD, and in accordance with the NPSNN, the Applicant should have regard to the current relevant River Basin Management Plan (RBMP), in this case the Thames RBMP, when determining whether the Proposed Development has the potential to impact upon any WFD waterbodies. The Inspectorate supports the preparation of a separate WFD assessment, which clearly explains how the requirements of the WFD have been met. This should be prepared in consultation with the EA. The Applicant's attention is drawn to the Inspectorate's advice note 18 on the WFD.</p>	<p>A separate WFD assessment has been prepared to a level of detail suited to the stage of the scheme. It has been undertaken with full regard for RBMP in consultation with the EA and in line with guidance in advice note 18. This will also be updated for the ES.</p>
<p>Water Environment 8.5 Potential impacts</p> <p>The ES should contain details of any proposed surface water drainage strategy, and how this information has been applied to the assessment. The drainage design should take into account the most recent climate change projections available. ECC have provided reference to guidance in their response regarding the design of SuDS to which the Applicant should have regard.</p>	<p>A Drainage Strategy will be provided in the ES.</p> <p>In Section 14.4.31 it is noted that the UK Climate Projections 2018 (UKCP18) will be available from November 2018. This data will be used in preference to UKCP09 data if available. At the end of December 2018, the current service providing UKCP09 will close.</p>
<p>Water Environment 8.6.1 Table 8.3 Floodplain compensation</p> <p>The Applicant indicates that an assessment of floodplain compensation is likely to be required due to loss of natural floodplain storage from the Proposed Development, and an analysis of this will form the basis of a detailed FRA. As with the ecology assessment, any impacts associated with delivery of the floodplain compensation should be assessed within the ES with appropriate cross reference (e.g. any impacts on river flow and freshwater ecology).</p>	<p>The impacts of delivering floodplain compensation will be assessed within the ES, referencing the analysis reported in the ES. All potential impacts will be assessed as appropriate, for example impacts on quality of agricultural land within the compensation area. The impacts will be addressed within the relevant sections of the ES with appropriate cross reference.</p>
<p>Water Environment 8.6.1 Table 8.3 8.7.4 Groundwater</p>	<p>This will be assessed in the ES.</p>

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<p>The Applicant states that they do not yet know if discharges to ground will be required and the suitability of any method to do so, but that an assessment of potential pollution impacts from any runoff to groundwater may be required. Any impacts associated with discharges to groundwater should be assessed for likely significant effects as part of the ES.</p>	
<p>Water Environment 8.7.5 Flood Risk Assessment (FRA)</p> <p>The Inspectorate stresses the need for early discussions with the EA and other relevant statutory consultees regarding the scope of the FRA. Where the FRA has been used to inform the assessment in the ES, this should be clearly set out with cross referencing where appropriate to avoid duplication of information.</p>	<p>The Environment Agency have been consulted regarding the assessment of the potential impacts on flood risk. This consultation will continue through the process. The FRA is the basis for the assessment in the ES.</p>
<p>Water Environment 8.11 Assumptions and limitations</p> <p>The Inspectorate notes the limitations to data collection identified but advises that the Applicant must ensure that they have a comprehensive set of data to inform their assessment. Where limitations are encountered, these should be detailed within the ES along with an explanation of how they have been addressed.</p>	<p>Noted.</p>
<p>Landscape 9.2.1 Landscape and visual receptors beyond 1.5km from the perimeter of the scheme</p> <p>The meaning of ‘the perimeter of the scheme’ is not defined in the Scoping Report, and no evidence is provided for the appropriateness of a 1.5km study area. It is not clear if the study area has included all features of landscape value which could be affected. It is not clear how the 1.5km relates to determining a ZVI for the assessment. Without this information, the Inspectorate cannot agree to scoping these receptors out at this stage. The ES must define and justify the study area applied and ensure that the impacts of the Proposed</p>	<p>Certainty in relation to the study area will be provided in the ES. The study area will be determined through agreement with relevant consultees.</p>

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<p>Development are assessed. The LBH have provided comment on this matter and the Inspectorate advises that the Applicant should make effort to agree the study area for the assessment with relevant consultees.</p>	
<p>Landscape 9.6.6 Table 9.2 Landscape effects on Warley, St Faith’s and Weald Country Park & Table 9.2 Weald Park (Grade II) Registered Park and Garden Given the uncertainty regarding the study area applied, and that limited evidence to support scoping this matter out has been presented in the Scoping Report, the Inspectorate cannot agree to scope this matter out and therefore it must be assessed in the ES. The Inspectorate notes that further assessment of Weald Park will be undertaken as part of the ES Cultural Heritage aspect chapter (paragraph 11.4.7 of the Scoping Report) and advises that appropriate cross-reference is made in the ES between the relevant chapters.</p>	<p>The study area will be determined through agreement with relevant consultees. We note Weald Park will be assessed as part of the Cultural Heritage aspect chapter and we will co-ordinate with other chapters</p>
<p>Landscape 9.6.7 Table 9.3 Visual effects on employees at Telecommunications Head Office and nearby residential properties in Brentwood Table 9.3 Visual effects on Boyles Court, Grade II Listed building Table 9.3 Visual effects on residential receptors to the north east including Lake House, Colmar Farm, Colmar, Park Farm and Halfway House & Table 9.3 Visual effects on residential receptors located on Nag’s Head Lane linking Brook Street area with Tyler’s Common to the south of Junction 28 Table 9.3 Visual effects on residential receptors to the north east of the M25 in South Weald situated along Wigley Bush Lane Reasoning is provided in Table 9.3, that in each case these receptors will not be subject to significant visual effects due their distance from the Proposed Development preventing views or due to existing</p>	<p>A robust study area will be established based on the extent of the likely impacts and agree with relevant consultees which receptors should be included in the assessment. A ZVI will be produced when established, showing location of receptors.</p>

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<p>screening features preventing views. The Inspectorate does not consider that sufficient information has been provided in the Scoping Report to demonstrate that impacts to these receptors would not occur. In the absence of this information the Inspectorate does not agree that these receptors can be scoped out. The Applicant should seek to establish a robust study area based on the extent of the likely impacts and should agree with relevant consultees which receptors should be included in the assessment. It is likely to be helpful to consultees to provide appropriate figures depicting the study area and ZVI when established, as well as the location of receptors.</p>	
<p>Landscape General Study area</p> <p>In connection to comments above, the Inspectorate advises that the study areas for the landscape assessment and the visual assessment need to be justified and efforts made to agree these with the relevant consultees. The Inspectorate notes the intention in paragraph 9.9.1 to consult on the location of viewpoints, photomontages, and the extent of the visual envelope. The Inspectorate agrees that this approach should be followed and that the ES should explain how this approach informed decisions taken in regards to the assessment.</p>	<p>Certainty in relation to the study area will be provided in the ES. The study area will be determined through agreement with relevant consultees, with consultation on location of viewpoints, photomontages, and the extent of the visual envelope. An explanation on how this approach informed decisions taken in regards to the assessment.</p>
<p>Landscape 9.4 Baseline conditions</p> <p>The Applicant should ensure that the baseline conditions used to inform the assessment are complete and robust. Information should be sought from the relevant consultees, and the Inspectorate advises the Applicant to have regard to the response from ECC which provides information on local sites of landscape interest.</p>	<p>Noted.</p>
<p>Geology and Soils 10.6.4 and Table 10.5 Geology as Valuable Resource</p> <p>The Inspectorate agrees that this can be scoped out due to the absence of mineral resources, geological SSSI or local geological sites (LGS)</p>	<p>Noted, this has been summarised within the PEIR and has not been assessed.</p>

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<p>within the study area, and therefore the absence of pathways by which significant effects could occur.</p>	
<p>Geology and Soils 10.6.5 and Table 10.5 Re-use of soils and waste soils The Scoping Report proposed to assess this matter in the Materials and Waste aspect chapter and on that basis it is scoped out of this assessment. However, the Inspectorate has not found any evidence that this matter is to be assessed in the Materials and Waste chapter. The Inspectorate requires that the ES includes an assessment of impacts associated with the re-use and disposal of soils, should the potential for likely significant effects be identified.</p>	<p>Noted. It has been confirmed that the re-use of soils and waste soils will be assessed within Chapter 12 (Materials and Waste) within the ES.</p>
<p>Geology and Soils 10.2.1 Study Area The ES should include an explanation as to how the study areas have been defined and detail the supporting reasoning. In particular the explanation should include how it appropriately accounts for impact resulting from increased mobility of ground contaminants.</p>	<p>Noted. An explanation has been added to the PEIR (10.2) to justify the boundary and extent of off-site study area. The ES will include further detail on how impacts resulting from increased mobility of ground contaminants will be accounted for.</p>
<p>Geology and Soils 10.6 Proposed Level and Scope of Assessment The Scoping Report states that ground investigation (GI) work will be undertaken and used to inform the scheme design (including mitigation design). However, the Scoping Report also implies that this information will not be used to inform the baseline assessment in the ES. The Inspectorate considers that the baseline assessment in the ES should be established using the most appropriate information available and this should include results from any relevant GI work undertaken.</p>	<p>Any data which are available has been used to assess the impacts within the PEIR to create a preliminary assessment. The GI data is expected to be available in time to update the preliminary assessment which will be included within the geology and soils chapter of the ES. GI data will be used to confirm/update the design and mitigation measures (listed in the PEIR) within the ES and identify whether further assessment is required based on detailed quantitative risk assessment results.</p>

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<p>Geology and Soils 10.7.2 Proposed Assessment Methodology</p> <p>The Inspectorate also considers that any assessment of contamination risk should be undertaken having regard to information obtained from the GI work referred to above. The relevant GI information should be included as an appendix in the ES to support the reader.</p>	<p>Agreed. Due to the proposed timescale, it is expected the GI data will be available in time for inclusion within the ES and this has been stated in the assessment methodology in the PEIR.</p>
<p>Geology and Soils 10.7.8 Proposed Assessment Methodology</p> <p>The Inspectorate notes that the receptors ‘nearby residential properties’ and ‘nearby workers’ have no clear definition in the Scoping Report. A description, in line with the justified study area, should be provided within the ES.</p>	<p>Noted. Any receptors within the 250 m study area are being referred to. Have changed ‘nearby’ to ‘off-site’ which also refers to land within the 250 m study area. This description has been included in 10.2.2. and all references to ‘nearby’ have been removed.</p>
<p>Geology and Soils 10.11.2 Assumptions and Limitations</p> <p>The ES should ensure that all impacts which may result in a likely significant effect have been appropriately assessed. All survey works necessary to inform this assessment should be undertaken prior to an application being made and should be used by and reported within the assessment in the ES. If detailed GI work is required for this purpose it should be undertaken in advance of any proposed application.</p>	<p>Reasonable worst-case scenario has been assumed in the preliminary assessment in the PEIR (see assumptions and limitations section within section 10.4). Therefore, any potentially significant effects will have been identified. The next stage of assessment (within the ES) will include detailed information and interpretation, which will ensure the significant effects will have been fully assessed.</p>
<p>Geology and Soils N/A Figures</p> <p>The ES should include figures where relevant to support the textual description of the receiving environment and nearby receptors.</p>	<p>Noted. A Figure showing potential sources of contamination and receptors within the site and within 250 m will be presented within the PEIR. If deemed useful, a figure would be provided which illustrated BMV receptors and another provided which illustrate geological hazards in the ES stage.</p>

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<p>Cultural Heritage 11.4.6 Effects to setting of Listed Buildings (except Stony Hills Farm) The figures presented in the Scoping Report (Figure F-1 and F-2) do not label the listed buildings by name and it is not possible to be confident in the justification provided in the Scoping Report that none of the Listed Buildings identified, except Stony Hills Farm, share intervisibility to and from the Proposed Development. No Zone of Visual Influence (ZVI) is set in the Scoping Report and no reference is made to how one will be determined. The Inspectorate cannot agree to scope this matter out on the basis of the information in the Scoping Report. The Inspectorate advises all assets likely to experience impacts on their setting are included in the assessment.</p>	<p>We will update the figures and label the listed buildings by name in the ES. We will include the Zone of Visual Influence as well as the reference. All assets likely to be affected will also be incorporated into the assessment.</p>
<p>Cultural Heritage 11.4.20 Effects on Historic Landscape The Inspectorate is aware that the Proposed Development would introduce new visually prominent structures which may impact upon the historic landscape. The Inspectorate does not agree that the justification provided in the Scoping Report is sufficient to support a decision to scope out the assessment of impacts on historic landscape. The LBH and ECC have also provided comment on this matter in their consultation responses, which the Applicant should take into account.</p>	<p>Action will be taken into incorporating the DMRB, which includes sections on the archaeology, built heritage and historic landscape in the ES.</p>
<p>Cultural Heritage 11.2.1 Study area The study area applied to the assessment in the ES must be clearly defined and described reflecting the extent of the anticipated impacts. The Applicant should seek agreement with relevant consultees regarding the appropriate study area. The Applicant should take into account the comments made by LBH and ECC in this regard. The Inspectorate recognises that there is likely to be an inter-relationship between the study area applied to this aspect and other aspects such</p>	<p>Action will be considered concerning the scope of the study area and a 250m buffer zone may also be added after discussion with other stakeholders in the ES.</p>

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<p>as the landscape and visual impact assessment, and recommends that appropriate cross-reference is made in the ES.</p>	
<p>Cultural Heritage 11.4 Baseline conditions The baseline assessment in the ES should include relevant information on local and regional heritage assets. The Inspectorate refers the Applicant to information received from the Greater London Archaeology Advisory Service (GLAAS) and the LBH regarding assets not yet recorded on the Greater London HER and the Havering Local Heritage List. This information should be obtained and taken into account in the baseline assessment in the ES.</p>	<p>The relevant information on local and regional heritage assets will be incorporated into the baseline assessment in the ES. We will update the ES to reflect both the regional and local heritage assets. As referred by the inspectorate we will also include the information received from the Greater London Archaeology Advisory Service, and the LBH concerning assets not recorded on the GLHER and the Havering Local Heritage List.</p>
<p>Cultural Heritage 11.7 and 11.9 Methodology The Applicant should seek to agree the methodology with relevant consultees, and have regard to the points raised by LBH and ECC particularly with regards to the guidance available to inform the assessment.</p>	<p>Agreed, we will discuss the methodology with the relevant consultees and will also take into account the points raised by the LBH and the ECC.</p>
<p>Cultural Heritage 11.5.1 and 11.5.3 Impacts to setting of designated heritage assets The assessment of impacts on setting of designated heritage assets should take into account changes in air and noise pollution. The Inspectorate is aware that the Proposed Development may increase air and noise pollution during construction and operation and this should be considered in the assessment of impacts to setting of heritage assets. ECC and the LBH have also provided advice in their responses in this regard which the Applicant should take into account.</p>	<p>Based on the recommendation by the inspectorate, we will investigate the impact of noise and air pollution on designated heritage assets. Additionally, we will consider the advice offered by the ECC and LBH concerning this issue.</p>
<p>Cultural Heritage 11.10 Mitigation measures</p>	<p>As mentioned we will look into the specific avoidance measures and mitigation measures to improve any negative effects. Furthermore, preservation in situ will</p>

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<p>The Applicant should provide details in the ES of avoidance measures and the specific mitigation measures designed ameliorate any significant effects. Preservation in situ is not mentioned as a potential mitigation measure in this section, and the Inspectorate considers that this should be investigated. Comments on this matter have been provided by GLAAS in their response and the Applicant should have regard to these.</p>	<p>also be investigated and consider the comments made by the GLAAS on this specific issue.</p>
<p>Cultural Heritage 11.11.1 Assumptions and limitations Many of the assertions in this section regarding the baseline and value of features, and regarding the impacts of the as yet unknown elements of the Proposed Development (eg the location of construction compounds) seem premature in advance of the assessment being carried out. The Inspectorate advises that these assumptions are critically reviewed during the assessment process, taking into account up to date design information and consultation responses. The LBH have also made comment on this matter in their response and the Applicant should have regard to this.</p>	<p>Assumptions in concerns to the baseline as well as the values of the features will be critically reviewed during the assessment process, along with the design information and consultation responses. Additionally, we will also look into the LBH comments on this matter.</p>
<p>Materials and Waste 12.6.5 Table 12.4 Change in demand for construction materials during the operation phase The Inspectorate agrees that this matter can be scoped out due to it being unlikely that the operational phase of the Proposed Development will result in significant effects on the market for construction resources</p>	<p>Noted.</p>
<p>Materials and Waste 12.6.5 Table 12.4 Change in baseline regional waste arisings during the operation phase The Inspectorate accepts that the waste generated during the operational phase of the Proposed Development will have a minimal effect on the study area’s waste baseline. As a result the Inspectorate</p>	<p>Noted.</p>

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<p>considers that significant effects are not anticipated, and that this matter can be scoped out.</p>	
<p>Materials and Waste 12.6.5 Table 12.4 Change in capacity of regional waste infrastructure during the operational phase The Inspectorate accepts that the waste generated during the operational phase of the Proposed Development will have a minimal effect on the study area’s waste infrastructure, and considers that significant effects are unlikely to occur and this matter can be scoped out.</p>	<p>Noted.</p>
<p>Materials and Waste 12.4 Baseline Conditions No reference to future baseline is made in this section, and the Applicant should have regard to paragraph 3.3.12 of this Opinion. The future baseline applied should be consistent with that applied to the other environmental aspect assessments in the ES. ECC have provided some advice in their response regarding local mineral and waste planning policy, which the Applicant should take into account when predicting future baseline conditions.</p>	<p>A future baseline has now been considered as part of the PEIR and future assessment where possible.</p>
<p>Materials and Waste 12.4.4 and 12.4.5 Baseline Conditions The Scoping Report states that regional information on material resources associated with construction, demolition and excavation (CD&E) is not available. The Applicant should make effort to obtain quantitative baseline data applicable to the assessment where this is available.</p>	<p>The material resources section has been updated in line with other road schemes and uses a regional baseline for material resources</p>
<p>Materials and Waste 12.4.4 and 12.4.5 Baseline Conditions</p>	<p>The material resources section has been updated in line with other road schemes and uses a regional baseline for material resources.</p>

PINS Scoping Comment	Highways England Response
<p>The Scoping Report states that regional information on material resources associated with construction, demolition and excavation (CD&E) is not available. The Applicant should make effort to obtain quantitative baseline data applicable to the assessment where this is available.</p>	
<p>Materials and Waste 12.7.5 Proposed Assessment Methodology Regarding key construction materials, this section indicates that they will be considered within the assessment, but that their sensitivity cannot be assessed. The ES should clearly explain how the assessment will approach the sensitivity of construction materials. The Applicant should make effort to obtain quantitative data to inform the assessment. Any professional judgement applied should be clearly explained and justified.</p>	<p>Methodology adapted, sensitivity will be based on any impact on Mineral Safeguarding Areas.</p>
<p>Materials and Waste 12.7.6, Table 12.5 Proposed Assessment Methodology The Scoping Report explains how sensitivity and magnitude combine to produce a level of effect, stating 'very large to moderate effects are considered to have the potential to be significant, while slight and neutral effects are not considered significant'. Table 12.5 of the Scoping Report presents differently worded 'levels' and does not define how the combination process is to be carried out. The ES should include a clear methodology explaining how significant effects will be assigned.</p>	<p>Please see section 4.9, we do not input the table in the chapter to prevent repetition.</p>
<p>Materials and Waste N/A Refer to 10.6.5 in Table 4.6 above. Re-use of soils and waste soils The Scoping Report (paragraph 10.6.5) states that this matter is addressed in this aspect chapter. However, the Inspectorate notes that no information is provided. The Inspectorate requires that the impacts associated with storage and disposal of soils should be assessed in the ES. Crossreference to</p>	<p>Quantities of soils are not available at this stage but will be considered in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>other aspect chapters should be made where applicable (eg where potential impacts to water quality are identified).</p>	
<p>People and Communities Table 13.7 Community land and facilities The Scoping Report states that as no community land or facilities are required to construct the Proposed Development, that direct impacts on them will not be considered. The Inspectorate understands from the information in the Scoping Report that indirect impacts to amenity and effects of severance will largely be addressed separately in this and in other aspect chapters. However, no information is presented regarding how the Proposed Development will impact community land and facilities by changes to traffic flows on the road network. Therefore the Inspectorate does not agree to scope this out and advises the Applicant that this matter must be assessed in the ES.</p>	<p>This will be addressed in the ES</p>
<p>People and Communities Table 13.7 Impacts relating to The Applicant should have regard to the comments in paragraph 3.3.21 of this Opinion above. Based on the characteristics of the Proposed Development, and without detailed justification being provided in the Scoping Report, the Inspectorate cannot agree to scope this matter out.</p>	<p>Seems to be some info missing? Not sure what 3.3.21 refers to?</p>
<p>People and Communities 13.6.4 Impacts on equestrians The Scoping Report states that no bridleways are located within the study area and, a 2014 study of non-motorised users suggested negligible equestrian use of paths in the area (no equestrians were recorded). Subject to this remaining the case in light of future refinements to the study area and updated baseline information, the Inspectorate agrees to scope this out.</p>	<p>Noted.</p>

PINS Scoping Comment	Highways England Response
<p>People and Communities 13.2.1 Study area</p> <p>The study area for land and property is described in the scoping report as being the area immediately adjacent to ‘the Scheme’. The study area for community severance is described as comprising affected roads and paths which provide access to community assets. These study areas are not defined in the Scoping Report and the Applicant must ensure that the area assessed is clearly defined in the ES. The Applicant should make an effort to agree the study area with consultees, and the Inspectorate notes that detailed comment on locally and regionally affected routes is provided by ECC in their response.</p>	<p>This will be addressed in the ES.</p>
<p>People and Communities 13.5.2 Table 13.7 Impacts on nonmotorised users</p> <p>The scoping report states that paths will remain open during construction and that the design of the Proposed Development will seek to maintain access for cyclists and pedestrians. The ES should provide details of these measures where they represent fixed design constraints on which the assessment will be based. The Inspectorate notes that non-motorised user baseline information will be desk-based and dates from 2014. The Inspectorate advises the Applicant to ensure the baseline information is as up to date as possible, and information should be sought from local planning authorities and other relevant consultees in this regard.</p>	<p>This will be addressed in the ES.</p>
<p>People and Communities 13.5 Impacts</p> <p>Adverse impacts from construction have been identified as temporary. The ES should explain the duration of impacts and what constitutes temporary impact.</p>	<p>This will be addressed in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>Climate Change 14.2.3 Preliminary studies and consultations; direct operational GHG emissions; operational water use; other processes; end of life. Noting that the Scoping Report predicts minimal/negligible GHG emissions associated with these matters, and given the nature of the Proposed Development, it is agreed that significant effects are unlikely to arise, but the Inspectorate asks that the evidence for excluding these processes is included in the ES.</p>	<p>The study area is based on Highways England guidance and this will be detailed in the ES.</p>
<p>Climate Change 14.12.2 Table 14.16 Average (air) temperature change (annual, seasonal, monthly) & 14.12.2 Table 14.16 Average wind speed change (annual, seasonal, monthly) & 14.12.2 Table 14.16 Humidity & 14.12.2 Table 14.16 Sea level rise (plus local land movements), storm surge/tide & 14.12.2 Table 14.16 Water availability/drought Having considered the nature of the Proposed Development and the information in the Scoping Report stating that it will have low climate vulnerability, the Inspectorate considers that significant effects are unlikely to occur. The Inspectorate is therefore content for this matter to be scoped out of the ES. The ES must make reference to, with appropriate detail, the design constraints and standards on which the conclusions of low climate vulnerability have been based.</p>	<p>Impacts associated with temperature, wind speed, humidity, sea level rise and drought will be scoped out. The ES will make reference to the design constraints and standards on which the conclusions of low climate vulnerability assessments for these items have been based.</p>
<p>Climate Change 14.12.2 Table 14.16 Average precipitation (annual, seasonal, monthly) & 14.12.2 Table 14.16 Storms (tracks and intensity), including storm surge Given the nature of the Proposed Development, in particular the presence of two watercourses and their associated floodplains, the</p>	<p>Impacts associated with precipitation and storms will be scoped in. The range of climate projections used for the purposes of any associated adaptation or resilience measures will be clearly stated in the ES. Section 14.4.31 “It is noted that the UK Climate Projections 2018 (UKCP18) will be available from November 2018. This data will be used in the assessment in preference to UKCP09 data if available.”</p>

PINS Scoping Comment	Highways England Response
<p>Inspectorate considers that these matters have the potential to affect the design of the proposals. Therefore, the Inspectorate advises that these matters should be assessed in the ES. The Applicant should clearly state the range of climate projections used for the purposes of any adaptation or resilience assessment, taking into account the anticipated updated projections in 2018.</p>	
<p>Climate Change 14.2.4 Study area data</p> <p>The Inspectorate notes that the study area will be dependent on the availability of design and construction information and if this data is unavailable, part or all of the affected lifecycles will be excluded from the assessment. The study area must be determined by the extent of the predicted impacts of the Proposed Development, and if applicable based on professional judgement in the absence of known data. If necessary the ES should clearly set out the assumptions applied to this assessment in place of this information, and any implications that exist for the robustness of the assessment.</p>	<p>The ES will clearly show how the study area is determined based on the spatial extent of the vulnerability of the Scheme to climate change. It will also state the area over which climate change projections used in the assessment are applicable.</p>
<p>Climate Change 14.7 Table 4.1 Table 4.2 Significance of effects</p> <p>The Inspectorate notes that there is currently no specific guidance for carbon emission thresholds, which if exceeded, is considered to be significant. The ES should therefore set out the criteria used to report on the significance of effects. The assessment of significance in the ES should be placed in context to the UK carbon budgets, the associated reduction targets, and in the context of the climate resilience of wider systems over time (as stated in paragraph 14.7.8 of the Scoping Report).</p>	<p>Noted. The assessment of significance will be placed in context with the UK carbon budgets, the associated reduction targets, and in the context of the climate resilience of wider systems over time.</p>
<p>Climate Change 14.7.1- 14.7.6 Calculation of greenhouse gas emissions</p> <p>The Scoping Report states that the Applicant will use the Atkins Carbon Knowledgebase (CKB) software to calculate emissions during</p>	<p>The Highways England Carbon Tool will now be used for the calculations. Details of the inputs and outputs of the Tool will be included in the ES.</p>

PINS Scoping Comment	Highways England Response
<p>all the lifecycle of the Proposed Development. Details of this carbon calculation and analysis software tool should be provided within the ES.</p>	
<p>Climate Change 14.7.16 - 14.7.17 Climate resilience assessment The Scoping Report does not explicitly set out the methodology that will be used to assess the resilience of the Proposed Development to climate change. The methodology should be set out within the ES.</p>	<p>This will be detailed in the ES.</p>
<p>Climate Change 14.11.1 - 14.11.2 Assumptions and limitations The Applicant states that for consultation purposes a detailed emissions assessment is not required and where project specific data is unavailable, suitable proxy data will be used where engineering and construction expertise can be obtained to generate this data. The Inspectorate advises that the Applicant should consult with relevant stakeholders on what data they would require for consultation purposes.</p>	<p>Consultation with relevant stakeholders will be undertaken if required.</p>
<p>Cumulative effects 15.4.4 Table 15.2 Zone of Influence / Study Area The zone of influence or study areas for cumulative effects for environmental aspects of the Proposed Development should be fully explained and justified in the ES. The Inspectorate advises that the Applicant adopt the approach detailed in Advice Note 17, including when determining the list of other developments to take into account in the assessment. The Applicant should make an effort to seek information and agreement from consultees. The LBH and ECC have provided advice regarding the cumulative assessment in their responses.</p>	<p>The methodology utilises Advice Note 17 and has set out ZOI using the study areas proposed in the topic chapters within the SR and PEIR. Consultation with the LPAs will establish the eventual final list of developments to be included in the ES.</p>
<p>Cumulative effects</p>	<p>This comment has been noted and will be considered for final ES.</p>

PINS Scoping Comment	Highways England Response
<p>15.4.7 Table 15.3 Significance of cumulative effects</p> <p>The Applicant should provide a clear description and justification in the ES of how significant effects have been determined. This should include a definition of the terms 'short-term', 'longterm', and 'temporary'.</p>	

Appendix D. Not used

Appendix E. Air Quality

E.1 Policy and legislation

National policy

National Policy Statement for National Networks (NN NPS)

E.1.1 The NN NPS, prepared by DfT, provides policy and guidance relating to the development of NSIPs. It recognises (paragraph 5.3) that increased emissions of pollutants during construction or operation of projects on national networks can contribute to adverse impacts on human health, on protected species and habitats. An ES is required for projects that may have significant air quality effects and this should describe (paragraph 5.7):

- Existing air quality levels;
- Forecasts of air quality at the time of opening, assuming that the scheme is not built (the future baseline) and taking account of the impact of the scheme; and
- Any significant effects, their mitigation and any residual effects, distinguishing between the construction and operation stages and taking account of the impact of road traffic generated by the project.

E.1.2 The NN NPS requires a judgement to be made as to the risk of a project affecting the UK's ability to comply with the Air Quality Directive; paragraph 5.11 states "Air quality considerations are likely to be particularly relevant where schemes are proposed: within or adjacent to AQMAs; roads identified as being above Limit Values or nature conservation sites; and where changes are sufficient to bring about the need for a new AQMA or change the size of an existing AQMA; or bring about changes to exceedances of the Limit Values, or where they may have the potential to impact on nature conservation sites."

E.1.3 In addition paragraph 5.12 states that air quality considerations must be given substantial weight where a project would lead to a significant air quality impact and/or lead to a deterioration in air quality in a zone/agglomeration.

E.1.4 Furthermore paragraph 5.13 of the NN NPS sets out that the Secretary of State should refuse consent, if including mitigation measures, the scheme will "affect the ability of a non-compliant area to achieve compliance within the most recent timescales reported to the European Commission at the time of the decision".

National Planning Policy Framework (NPPF)

E.1.5 Paragraph 181 of the NPPF requires local planning authorities (LPAs) to take account of air quality in plan making.

E.1.6 Paragraph 181: "Planning policies and decisions should sustain and contribute towards compliance with relevant limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and Clean Air Zones, and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green

infrastructure provision and enhancement. So far as possible these opportunities should be considered at the plan-making stage, to ensure a strategic approach and limit the need for issues to be reconsidered when determining individual applications. Planning decisions should ensure that any new development in Air Quality Management Areas and Clean Air Zones is consistent with the local air quality action plan.”

National Air Quality Plan

- E.1.7 The Government produced a UK plan in July 2017 for tackling roadside nitrogen dioxide concentrations which sets out the approach for meeting the statutory EU limit values for nitrogen dioxide in the shortest possible time.

Road Investment Strategy (RIS) and Strategic Business Plan

- E.1.8 The Department for Transport (DfT) RIS published in 2015 sets out the DfT's aspirations for the Strategic Road Network (SRN) over the next 25 years. It states that by 2040 DfT aspires to a network that will be sustainable with "zero breaches of air quality regulations and major reductions in carbon emissions across the network".
- E.1.9 The Highways England Delivery Plan 2015-2020 (HE, 2015) identifies Highways England's commitment to investing £75m "in a range of projects to reduce pollution and ensure the air around the network is clean and healthy". The Highways England Delivery Plan 2017-2018 (HE, 2017) sets out indicators that will be used to measure performance, including of relevance to air quality, the number of air quality pilot studies completed.

Highways England Air Quality Strategy 2017

- E.1.10 This document sets out Highways England's approach to improving air quality. As part of the strategy, Highways England has identified four priority action areas; policy, planning, monitoring and operational management, and has committed to "where appropriate, design out or mitigate poor air quality for our schemes".

Regional policy

The London Plan (2016)

- E.1.11 Paragraph 3.10A outlines strategic policies for inner and Greater London, specifically concerning new development and the need to support safe and sustainable transport systems whilst reducing road traffic casualties and improving air quality.
- E.1.12 Policy 7.14 outlines the 'importance of tackling air pollution and improving air quality to London's development and the health and wellbeing of its people'. Development proposals should:
- Minimise increased exposure to existing poor air quality and make provision to address local problems of air quality;
 - Be at least 'air quality neutral' and not lead to further deterioration of existing poor air quality (such as areas designated as Air Quality Management Areas); and

- Ensure that where provision needs to be made to reduce emissions from a development, this is usually made on-site.

The Draft New London Plan (2018)

E.1.13 Policy SI1 is focused on improving air quality and notes that [inter alia]:

- Development proposals should not:
 - Lead to further deterioration of existing poor air quality;
 - Create new areas that exceed air quality limits, or delay the date of compliance for areas currently in exceedance;
 - Reduce air quality benefits resulting from the Mayor's or borough's activities to improve air quality;
 - Create unacceptable risk of high levels of exposure to poor air quality.
- Development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems. Care should be taken in Air Quality Focus Areas or areas used by large numbers of vulnerable people;
- Development proposals must demonstrate how they plan to comply with the Non-Road Mobile Machinery Low Emission Zone and reduce emissions from demolition and construction of buildings following best practice guidance; and
- Development proposals should ensure that where emissions need to be reduced, that this is done on-site.

E.1.14 The Mayor of London is committed to making London's air quality the best of any major world city, which means not only meeting and maintaining legal limits for nitrogen dioxide as soon as possible, but also working to achieve World Health Organisation targets for other pollutants such as particulate matter.

The Mayor's Transport Strategy (2018)

E.1.15 The Mayor wants to prioritise human health, by changing London's transport mix to reduce car dependency. Policy 6 states that the Mayor will take action to reduce emissions from vehicles on London's streets, to improve air quality and support London reaching compliance with UK and EU limits as soon as possible.

Essex Local Transport Plan (2011)

E.1.16 Essex County Council has a duty to have regard to the environment, including issues such as carbon dioxide produced by transport and air quality when producing a local plan. Subsequently, the Essex Transport Strategy Outcomes include the need to reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology.

Local policy

London Borough of Havering Core Strategy 2008

- E.1.17 The Adopted Havering Core Strategy outlines policies which address air quality management, specifically Policy CP15, which states that new development should 'ensure that it does not singularly or cumulatively breach air quality targets'. Policy DC52 states that permission will only be granted for development if it does not 'cause significant harm to air quality, and does not cause a breach of the targets set in Havering's Air Quality Management Area Action Plan (HAQMAAP)'. Where a breach is suspected, formal assessment will be required. Where the assessment confirms a breach, permission will only be granted once 'suitable mitigation measures are put in place'.

London Borough of Havering Local Plan 2016-2031: Submission Version with Proposed Amendments March 2018

- E.1.18 Policy 33 of the proposed Havering Local Plan 2017 focuses on the Council's commitment to improve air quality in Havering, in order to improve the health and wellbeing of Havering's residents. The Council intends to support development which 'is at least air quality neutral' and 'minimises emissions from construction'. Policy 34 goes on to state that the Council will support development proposals which 'do not unduly impact upon amenity, human health and safety and the natural environment'.

London Borough of Havering Air Quality Action Plan (AQAP)

- E.1.19 The London Borough of Havering has prepared a draft AQAP, which outlines actions it will take to improve air quality between 2018 and 2023. Actions include measures to raise public awareness, to reduce emissions from buildings and developments, and to reduce emissions from transport.

Brentwood Replacement Local Plan (2005)

- E.1.20 Policy CP1 of the Adopted Brentwood Replacement Local Plan outlines the requirement for any development to satisfy part vii, specifically to not have an 'unacceptable detrimental impact on health, the environment or amenity due to the release of pollutants, including air pollutants'.
- E.1.21 Policy PC6 of the Brentwood Local Plan Saved Policies concerns transport pollution. The policy states that all new transport proposals and improvements will be 'assessed against their impact on air quality, noise levels and visual amenity', with an overarching need to 'minimise any negative impacts' and incorporate mitigation measures.

Brentwood Draft Local Plan (January, 2016)

- E.1.22 The Brentwood Draft Local Plan reinforces the aforementioned policies concerning the promotion of measures to improve air quality, particularly 'within designated Air Quality Management Areas'. Furthermore, the Council expects proposals to 'reduce sources of air pollution'. An air quality assessment is required where the Council considers that air quality objectives are 'likely to be prejudiced'.

E.1.23 Policy 10.11: Air Quality states: "The Council will promote measures to improve air quality, particularly within designated Air Quality Management Areas, and will expect development proposals to reduce sources of air pollution. Where the Council considers that air quality objectives are likely to be prejudiced or proposals fall within an Air Quality Management Area, applicants will be required to submit a detailed air quality assessment which sets out the impact the proposed development would have upon air quality."

Brentwood Borough Council AQAP (2008)

E.1.24 The Brentwood AQAP states that the main source of air pollution in the borough is derived from road traffic. In order to achieve the NO₂ air quality objective, the AQAP describes three specific schemes to help reduce congestion including:

- The M25 Junction 28/A12/Brook Street improvement;
- Junction 27 to 30 M25 Widening; and
- Wilson's Corner in Brentwood town centre.

E.1.25 In addition, the AQAP describes general measures to be taken such as park and ride facilities, travel plans, freight management, and the promotion of public transport services, walking, cycling and bus priority measures.

E.2 PM_{2.5}

E.2.1 At the closest monitoring station to the Scheme, the Rainham roadside site, concentrations between 2013 and 2017 were below the annual mean air quality criterion of 25 µg/m³, ranging between 11 µg/m³ and 12 µg/m³.

E.2.2 Highways England has calculated that a large increase in 10,000 vehicles a day at a point very close to the edge of a motorway (5m), would lead to an increase in PM_{2.5} of approximately 0.5 µg/m³, and even allowing for an uncertainty estimate of a factor of 2, would result in a maximum change of 1 µg/m³.

E.2.3 Combining a maximum increase in PM_{2.5} roadside concentrations of 1 µg/m³ with a measured concentration of 12 µg/m³, as recorded at Rainham roadside site in 2017, would result in a concentration of 13 µg/m³, which is 12 µg/m³ below the limit value. On this basis there is not considered to be a risk that the Scheme would exceed the PM_{2.5} air quality criterion and consequently an assessment of PM_{2.5} has not been undertaken for this Scheme.

Appendix F. Noise and Vibration

F.1 Planning and policy context

National policy

National Policy Statement for National Networks (NN NPS)

- F.1.1 Paragraph 5.193 states that 'developments must be undertaken in accordance with statutory requirements for noise'. Due regard must be given to relevant sections of the Noise Policy Statement for England National Planning Policy Framework and the Government's associated planning guidance on noise.
- F.1.2 The National Policy Statement for National Networks (NN NPS) (paragraph 5.195) aligns with the main aims of the Noise Policy Statement for England (NPSE) and NPPF (paragraph 180) (see appropriate sections below). Furthermore, a project should not be consented unless it meets the aim to “*contribute to improvements to health and quality of life through the effective management and control of noise, where possible.*” Other key parts include paragraph 5.186 - Excessive noise can have wide-ranging impacts on the quality of human life and health (e.g. owing to annoyance or sleep disturbance), use and enjoyment of areas of value (such as quiet places) and areas with high landscape quality; and paragraph 5.187 - Noise resulting from a proposed development can also have adverse impacts on wildlife and biodiversity. Noise effects of the proposed development on ecological receptors should be assessed in accordance with the Biodiversity and Geological Conservation section of this NPS. Paragraph 5.188 identifies factors that will determine the likely noise impact including:
- Construction noise and the inherent operational noise from the proposed development and its characteristics;
 - The proximity of the proposed development to noise sensitive premises (including residential properties, schools and hospitals) and noise sensitive areas (including certain parks and open spaces);
 - The proximity of the proposed development to quiet places and other areas that are particularly valued for their tranquillity, acoustic environment or landscape quality such as National Parks, the Broads or Areas of Outstanding Natural Beauty; and
 - The proximity of the proposed development to designated sites where noise may have an adverse impact on the special features of interest, protected species or other wildlife.
- F.1.3 The assessment of a project (paragraph 5.146) should “include the visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation.”

National Planning Policy Framework (NPPF)

- F.1.4 Section 170 of the NPPF includes the statement that planning policies and decisions should contribute to and enhance the natural and local environment by “preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans”
- F.1.5 Section 180 of the NPPF notes that “planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:
- mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
 - identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and
 - limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.”

Noise Policy Statement for England (NPSE) 2010

- F.1.6 Current noise policy in England is based on the Noise Policy Statement for England (NPSE), which through the effective management and control of environmental, neighbour, and neighbourhood noise within the context of Government policy on sustainable development, aims to:
- Avoid significant adverse impacts on health and quality of life;
 - Mitigate and minimise other adverse impacts on health and quality of life; and
 - Contribute to improvements to health and quality of life, where possible.
- F.1.7 The Explanatory Note to the NPSE assists in the definition of significant adverse and adverse with the following concepts:
- NOEL - no observed effect level. This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise;
 - LOAEL - lowest observed adverse effect level. This is the level above which adverse effects on health and quality of life can be detected; and
 - SOAEL - significant observed adverse effect level. This is the level above which significant adverse effects on health and quality of life occur.
- F.1.8 The Government policy and guidance do not state values for the NOEL, LOAEL and SOAEL, rather, it considers that they are different for different noise sources, for different receptors and at different times and should be defined on a strategic

or project basis taking into account the specific features of that area, source or project.

Road Investment Strategy

- F.1.9 The Department for Transport “Road Investment Strategy for the 2015/16 - 2019/20 Road Period”, aspires to the target that by 2040 over 90% fewer people are impacted by noise from the strategic road network. The target for the first Road Period 2015-2020, is to mitigate at least 1,150 Noise Important Areas expecting to reduce the number of people severely affected by noise from the strategic road network by at least 250,000.

Control of Pollution Act 1974 (as amended)

- F.1.10 The following sections of the Control of Pollution Act are related to noise:
- Section 60 - Control of noise on construction sites;
 - Section 61 - Prior consent for work on construction sites;
 - Section 71 - Codes of practice for minimising noise; and
 - Section 72 - Best practicable means.

Environmental Protection Act 1990 (as amended)

- F.1.11 Section 79 (1) (ga) in the Environmental Protection Act states that noise that is prejudicial to health or a nuisance and is emitted from or caused by a vehicle, machinery or equipment in a street, is a statutory nuisance; (NB if so should be inspected by the local authority) and section (9) refers to the interpretation of “best practicable means”.

Land Compensation Act 1973

- F.1.12 Part I of the Land Compensation Act includes compensation for depreciation caused by the use of public works.

The Control of Noise (Code of Practice for Construction and Open Sites) (England) Order 2015

- F.1.13 The Control of Noise Order approves BS 5228:2009+A1:2014 Part 1 Noise and Part 2 Vibration for the purpose of giving guidance on appropriate methods for minimising noise and vibration.

Noise Insulation Regulations 1975 (as amended)

- F.1.14 With regard to operational noise arising from highways, Regulation 3 imposes a duty on authorities to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings, Regulation 4 provides authorities with discretionary powers to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings.
- F.1.15 Regulation 5 of the Noise Insulation Regulations provides relevant authorities with discretionary powers to undertake or make a grant in respect of the cost of undertaking noise insulation work in or to eligible buildings with respect to construction noise.

F.1.16 All three regulations are subject to meeting certain criteria detailed-within the given Regulation.

The Highways Noise Payments and Movable Homes (England) Regulations 2000

F.1.17 These Regulations provide highway authorities with a discretionary power to provide a noise payment where new roads are to be constructed or existing ones altered. The relevant Regulations set out the criteria which should be applied in assessing eligibility for making such payments.

Environmental Noise (England) Regulations 2006

F.1.18 These regulations take into account Noise Action Plans.

Regional policy

The London Plan (2016)

F.1.19 Paragraph 7.18 states that “The effects of traffic can have a significant impact on the quality of the public realm in terms of air quality, noise and amenity of a space. The negative effects of traffic should be minimised to ensure people’s enjoyment of the public realm is maximised”.

F.1.20 Policy 7.15 concerns the reduction and management of noise and improving and enhancing the acoustic environment. The Policy states that proposals should seek to manage noise levels by:

- Avoiding significant adverse noise impacts on health and quality of life as a result of new development;
- Mitigating and minimising the existing and potential adverse impacts of noise on, from, within, as a result of, or in the vicinity of new development without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens on existing businesses;
- Improving and enhancing the acoustic environment and promoting appropriate soundscapes (including Quiet Areas and spaces of relative tranquillity);
- Separating new noise sensitive development from major noise sources (such as road, rail, air transport and some types of industrial development) through the use of distance, screening or internal layout – in preference to sole reliance on sound insulation;
- Where it is not possible to achieve separation of noise sensitive development and noise sources, without undue impact on other sustainable development objectives, then any potential adverse effects should be controlled and mitigated through the application of good acoustic design principles;
- Having particular regard to the impact of aviation noise on noise sensitive development; and
- Promoting new technologies and improved practices to reduce noise at source, and on the transmission path from source to receiver.

The Mayor's Transport Strategy (2010)

- F.1.21 Proposal 86 in The London Mayor's Transport Strategy concerns targeting the provision of noise reduction measures and noise mitigation measures in areas significantly affected by transport noise. This will be carried out by ways including ensuring all new transport projects consider noise mitigation. Furthermore, road maintenance programmes will be introduced to replace road surfaces with low noise surfacing where possible.

Essex Local Transport Plan (2011)

- F.1.22 Policy 9, concerning the Natural, Historic and Built Environment, states that the County Council will protect the natural, historic and built environment from the harmful effects of transport by minimising the visual and noise impacts of transport.

Local policy

London Borough of Havering Core Strategy 2008

- F.1.23 Policy CP15 notes that construction and new use development should 'avoid a noise sensitive use being exposed to excessive noise', that the policy aims to ensure that 'noise sensitive developments are located away from existing sources of significant noise (or programmed development such as new roads)' and that 'potentially noisy developments' should be 'located in areas where noise will not be such an important consideration'. Alongside this, Policy DC55 states that 'exposure to noise or vibrations above acceptable levels' will result in refused permission for development where this affects noise sensitive development such as dwellings, schools and hospitals.

London Borough of Havering Local Plan Proposed Submission August 2017

- F.1.24 In accordance with Policy 34 the Council will support development proposals that do not unduly impact upon amenity, human health and safety and the natural environment by noise emissions.

Brentwood Replacement Local Plan (Adopted Plan 2005, Saved Policies 2008)

- F.1.25 Policy CP1, a general development criteria policy, outlines the requirement for new development proposals to have no 'unacceptable detrimental effect on health, the environment or amenity' on paragraph 'vii', which includes 'light, noise pollution and vibration'.
- F.1.26 Policy PC6, concerning transport pollution, states that 'all new transport proposals and improvements to existing transport infrastructure and services will be assessed against their impact *on Air Quality, Noise Levels, and Visual Amenity, and will need to be designed so as to minimise any negative impacts and, where necessary, incorporate reasonable and appropriate mitigation measures*'.

Brentwood Draft Local Plan (January, 2016)

- F.1.27 Policy 6.3 of the Brentwood Draft Local Plan, a general development criteria policy, outlines the requirement for proposals to meet criteria including have no 'unacceptable effect on health, the environment or amenity' due to the release of pollutants to land, water or air (light, noise pollution, vibration, odour, smoke, ash, dust and grit); cause no unacceptable effects on adjoining sites, property, or their occupiers, though excessive noise, activity, or vehicle movements'.

Appendix G. Biodiversity

G.1 Planning and policy context

National policy

National Policy Statement for National Networks (NN NPS)

- G.1.1 Paragraphs 5.22 and 5.23 outline the need for a project to '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'. Furthermore, the applicant should show the extent to which the project has 'taken advantage of opportunities to conserve and enhance biodiversity and geological conservation interests'.
- G.1.2 Paragraph 5.25 concerns the stance that, whilst development should avoid significant harm to biodiversity and geological conservation interests, 'where significant harm cannot be avoided or mitigated, as a last resort, appropriate compensation measures should be sought'.
- G.1.3 Paragraph 5.31 of the NN NPS outlines that whilst due consideration should be given to biodiversity and ecology designations, they would not constitute a reason to refuse development consent.
- G.1.4 Para 4.23 sets out that any application should be accompanied by sufficient information to enable examining authority to undertake an appropriate assessment under the Habitats Regulations.

National Planning Policy Framework (NPPF)

- G.1.5 The National Planning Policy Framework (NPPF) 2018 Section 15 requires the planning system to contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity value, recognising the wider benefits from natural capital and ecosystem services and minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

Regional policy

The London Plan (2016)

- G.1.6 The London Plan states the Mayor's desire to 'work with all relevant partners to ensure a proactive approach to the protection, enhancement, creation, promotion and management of biodiversity in support of the Mayor's Biodiversity Strategy'. Therefore, proposals should make a 'positive contribution to the protection, enhancement, creation and management of biodiversity'. Furthermore, proposals should 'give the highest protection to sites with existing or proposed international designations (SACs, Special Protection Areas (SPAs), [Wetlands of International Importance] (Ramsar sites) and national designations (Sites of Specific Scientific Interest (SSSIs) and National Nature Reserves (NNNR)).'
- G.1.7 Policy 7.19 (Biodiversity and access to nature) expects development proposals to give sites of borough and local importance the level of protection that is commensurate with their importance in the overall hierarchy (in line with the

NPPF). Policy 7.21 (Trees and Woodland) seeks to retain existing trees of value and any loss should be replaced.

London Mayors Biodiversity Strategy

- G.1.8 The London Mayor's Biodiversity Strategy (2002) sets out the policies that are necessary to ensure the conservation of London's natural environment and improve the ecology of the city. The objective of the strategy is to promote the conservation of biodiversity, by providing direction to London authorities to:
- Establish a network of Sites of National Conservation (SINCs);
 - Support and encourage boroughs, land-owners and Londoners to take practical actions to improve the ecology of land they own or manage, including private gardens;
 - Use the planning system to green the urban environment through the installation of green roofs, planting of street trees and restoring rivers; and
 - Create more semi-natural green spaces to increase habitat for wildlife and provide Londoners with better access to nature.

Local policy

London Borough of Havering Core Strategy 2008

- G.1.9 Policy CP16 protects and enhances the borough's 'rich biodiversity and geodiversity, in particular, priority habitats, species and sites'. Policy DC58 reinforces the protection of SSSIs, and all sites of Metropolitan, Borough or Local Importance for Nature Conservation', with the remit of refusing consent for proposals that adversely affect those designations unless 'the economic or social benefits of the proposals clearly outweigh the nature conservation importance of the site'. Even then adequate mitigation must be provided and it must be demonstrated that no alternative site is available.
- G.1.10 Under Policy DC59 enhancements to biodiversity and geodiversity will be sought, in line with London and Havering Biodiversity Action Plan targets, as an integral part of new development.
- G.1.11 Policy DC60 outlines the 'amenity and biodiversity value afforded by trees and woodland'. The policy states that trees and woodland will be protected and improved by:
- Where appropriate, retaining trees of nature conservation and amenity value and making tree preservation orders;
 - Ensuring that adequate measures are put in place when granting planning permission to protect trees during construction works;
 - Supporting the implementation of the Thames Chase Plan and ensuring that, development within the area makes a positive contribution towards its implementation; and
 - Not granting planning permission for development that would adversely affect ancient and secondary woodland.

London Borough of Havering Local Plan Proposed Submission August 2017

- G.1.12 Policy 30 outlines the Council's vision to 'protect and enhance the rich biodiversity and geodiversity in Havering'. This will be implemented by 'protecting SSSIs, Local Nature Reserves (LNRs) and SINCs'. Furthermore, recognised priority species and habitats will be protected, alongside 'conserving and, where possible, extending wildlife corridors'. Therefore, development must demonstrate that the impact of proposals on protected sites and species has been fully assessed when development has the potential to impact on such sites or species'. 'Appropriate mitigation and/or compensation measures will also need to be identified where necessary'.

London Borough of Havering Supplementary Planning Document

- G.1.13 The London Borough of Havering adopted a Supplementary Planning Document in 2009 entitled 'Protecting and Enhancing the Borough's Biodiversity'. This provides relevant detail on how Development Control Policies DC58 and DC59 are to be implemented.

Brentwood Replacement Local Plan (2005)

- G.1.14 Policy C3 concerns '[Local] Wildlife Sites (LWSs), LNRs and Other Habitats and Natural Features of Local Value'. Specifically, the policy states that development which would have an 'unacceptable detrimental impact' upon any site listed previously 'will not be permitted unless it can be clearly demonstrated that there are reasons for the proposal which outweigh the need to safeguard the substantive nature conservation value of the site or feature'. Furthermore, 'appropriate mitigation and compensatory measures' should be provided where appropriate.
- G.1.15 Policy C4 states the need for development to retain existing woodlands with management 'appropriate to age, use, location and scientific interest'. Furthermore, the policy goes on to outline the need for the 'visual amenity, historical and ecological values of the woodland are safeguarded, and, where possible, enhanced'.
- G.1.16 Policy C5 outlines the need for new development to allow for the retention of 'existing trees, hedges, woods, ponds, watercourses and other natural features'. Furthermore, development schemes must be accompanied by a site survey showing the existing landscape; a plan showing all existing trees; proposals for new tree planting; and a method statement for arboricultural work within the Scheme.
- G.1.17 Policy C7 states that development which would 'damage, destroy or threaten the future survival of trees protected by a tree preservation order, or trees within an area identified as ancient woodland or in a conservation area will not be permitted unless the removal of the tree would be in the interests of good arboricultural / silvicultural practice or the development clearly outweighs the amenity and/or nature conservation value of the tree'.

Brentwood Draft Local Plan (January, 2016)

- G.1.18 Policy 9.1 states that the Council is committed to 'safeguarding the diversity and local distinctiveness of the Borough'. Of particular relevance is the conservation and enhancement of 'biodiversity and habitats, including through the creation of

new habitats'. Policy 9.2 states that the specific features which the Council intends to protect include 'Hedgerows and field walls; trees, woodlands, plantations and shelter belts; river corridors; wetlands, ponds and reservoirs; soft landscaping; and other locally important habitats.'

- G.1.19 Policy 9.6, concerning Conservation Areas, states that the development must be 'proportional in scale, and complementary in design, with the adjoining buildings'. Furthermore, where an alteration is proposed, it must be 'appropriate and sympathetic in design, scale, materials and colour to the rest of the building and wider area'.
- G.1.20 Policy 10.6 outlines the need for high quality design as part of development proposals. Specifically, development should contribute positively to proposals located within Conservation Areas, and ensure that new development is 'sensitively sited and integrated in accordance with national policy and guidance'.
- G.1.21 Policy 10.12, concerning floodlighting and illumination, states that development involving 'floodlighting or any other means of illumination' will only be permitted where the scheme demonstrates 'adequate protection from glare and light spill', particularly in locations which include sites of nature conservation interest'.

Biodiversity Action Plans (BAP)

- G.1.22 The UK BAP is the UK's initiative to maintain and enhance biodiversity in response to the Convention on Biological Diversity signed in 1992.
- G.1.23 The UK BAP was used to draw up the 'England Biodiversity List' (see below) and has been succeeded by the UK Post-2010 Biodiversity Framework in 2012, due to a change in government strategy by all UK countries, focussing on managing the environment as a whole rather than dealing with different aspects of biodiversity and environment separately. However, the UK BAP list of priority habitats and species continue to be regarded as conservation priorities in the UK Post-2010 Biodiversity Framework.
- G.1.24 The London Biodiversity Partnership published the London BAP in 2002. There are 11 priority habitats and 214 priority species included within the plan. All 11 habitats and eight of the species have specific Action Plans.
- G.1.25 London Borough of Havering BAP has six priority habitats and 15 priority species. All priority habitats are also London BAP priority, but ten of the 16 priority species on the Havering BAP are not included as London priorities, reflecting the focus on species of the suburban and greenbelt land more associated with Havering than urban London.
- G.1.26 The Essex BAP focusses on 11 priority habitats and provides Habitat Action Plans for each.

Summary of relevant ecological legislation

- G.1.27 Tables G.1 to G.3 provide further details on biodiversity legislation.
- G.1.28 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity as identified by the Secretary of State for England, in consultation with Natural England, are referred to in Section 41 of the NERC Act 2006 for England. The list of Habitats of Principal Importance (HPI) and Species of Principal Importance

(SPI) was based on UK BAP priority habitats and species and was updated in 2008. It is known as the 'England Biodiversity List'.

Table G.1: Relevant Biodiversity Legislation

Species	Legislation	Offences	Licensing procedures and guidance
Bats European protected species	Conservation of Habitats and Species Regulations 2010 (as amended) Reg 41	Deliberately ¹ capture, injure or kill a bat; deliberate disturbance ² of bats; or damage or destroy a breeding site or resting place used by a bat. [The protection of bat roosts is considered to apply regardless of whether bats are present.]	A Natural England (NE) licence in respect of development is required. Guidance documents: NE Standing Advice for protected species 2013 European Protected Species: Mitigation Licensing- How to get a licence (NE 2013) Bat Mitigation Guidelines (English Nature 2004) Bat Workers Manual (JNCC 2004)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
Badger	Protection of Badgers Act 1992 (as amended)	Wilfully kill, injure or take a badger; or intentionally or recklessly damage, destroy or obstruct access to a badger sett or disturb a badger in its sett. [It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.]	Where required, licences for development activities involving disturbance or sett interference or closure are issued by Natural England (NE). Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process. Licences are normally not granted from December to June inclusive because cubs may be present within setts. Guidance documents: NE Standing Advice for protected species 2013 Badgers & Development (NE 2007)
Otter European protected species	Conservation of Habitats and Species Regulations 2010 (as amended) Reg 41	Deliberately ¹ capture, injure or kill an otter; deliberate disturbance ² of otters; or damage or destroy a breeding site or resting place used by an otter.	Licences issued for development by Natural England. Guidance documents: NE Standing Advice for protected species 2013 European Protected Species: Mitigation Licensing- How to get a licence (NE 2013)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ an otter in such a place.	No licence is required for survey in England. However, a licence would be required if the survey methodology involved disturbance.

Species	Legislation	Offences	Licensing procedures and guidance
Hazel dormouse European protected species	Conservation of Habitats and Species Regulations 2010 (as amended) Reg 41	Deliberately ¹ capture, injure or kill a hazel dormouse; deliberate disturbance ² of a hazel dormouse; or damage or destroy a breeding site or resting place used by a hazel dormouse.	A Natural England licence in respect of development is required. Guidance documents: NE Standing Advice for protected species 2013 European Protected Species: Mitigation Licensing- How to get a licence (NE 2013) Dormouse Conservation Handbook (English Nature 2006)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ a hazel dormouse in such a place.	Licence issued for survey and conservation by Natural England.
Water vole	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally kill, injure or take water voles; intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection or disturb a water vole in such a place.	Conservation licences issued for trapping and translocation operations by Natural England. Certain displacement operations can be carried out under a class licence. Guidance documents: The Water Vole Conservation Handbook (R. Strachan & T. Moorhouse, Wildlife Conservation Research Unit, 3rd Edition 2011) Water voles and development licensing policy - NE Technical Information Note TIN042 2008 NE Standing Advice for protected species 2013 The Water Vole Mitigation Handbook (M. Dean, R. Strachan, D. Gow & R. Andrews 2016)
Birds	Wildlife and Countryside Act 1981 (as amended) S.1	Intentionally kill, injure or take any wild bird; intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; intentionally take or destroy the nest or eggs of any wild bird. Intentionally or recklessly disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. Guidance documents: NE Standing Advice for protected species 2013

Species	Legislation	Offences	Licensing procedures and guidance
		dependent young of such a species [e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover].	
Great crested newt European protected species	Conservation of Habitats and Species Regulations 2010 (as amended) Reg 41	Deliberately ¹ capture, injure or kill a great crested newt; deliberate disturbance ² of a great crested newt; deliberately take or destroy its eggs; or damage or destroy a breeding site or resting place used by a great crested newt.	Licences issued for development by Natural England. Guidance documents: NE Standing Advice for protected species 2013 European Protected Species: Mitigation Licensing- How to get a licence (NE 2013) Great Crested Newt Mitigation Guidelines (English Nature 2001)
	Wildlife and Countryside Act 1981 (as amended) S.9	Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb ³ a great crested newt in such a place.	Licences issued for science (survey), education and conservation by Natural England.
Adder Common lizard Grass snake Slow worm	Wildlife and Countryside Act 1981 S.9(1) and S.9(5)	Intentionally kill or injure any common reptile species.	No licence is required. However, an assessment for the potential of a site to support reptiles should be undertaken prior to any development works which have potential to affect these animals. Guidance documents: NE Standing Advice for protected species 2013
White-clawed crayfish	Wildlife and Countryside Act 1981 S.9(1) only	Intentionally take from the wild.	Licences issued by Natural England for survey (to take crayfish by hand, by hand net or by crayfish trap). Use of crayfish traps for survey requires Environment Agency consent. Using crayfish traps to remove crayfish for maintenance or development activities in a watercourse requires a conservation licence from Natural England and a permit from the Environment Agency. No licences in respect of development are available. Guidance documents: NE Standing Advice for protected species 2013
Rabbits, foxes and other wild mammals	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits, foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys) and other wild mammals, on their website. Lawful and humane pest control of these species is permitted.

Species	Legislation	Offences	Licensing procedures and guidance
Plants Invasive species e.g. Japanese knotweed, hybrid knotweed, giant knotweed, giant hogweed, rhododendron, Himalayan balsam	Wildlife and Countryside Act 1981 S.14	It is illegal to plant or otherwise cause these species to grow in the wild.	Any contaminated soil or plant material is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. Guidance documents: The Knotweed Code of Practice (Environment Agency, 2013 version 3) Managing Invasive Non-native Plants (Environment Agency 2010) Guidance on Section 14 of the Wildlife and Countryside Act, 1981 (Defra 2010)

¹Deliberate capture or killing is taken to include “accepting the possibility” of such capture or killing

²Deliberate disturbance of animals includes in particular any disturbance which is likely a) to impair their ability (i) to survive, to breed or reproduce, or to rear or nurture their young, or (ii) in the case of animals of hibernating or migratory species, to hibernate or migrate; or b) to affect significantly the local distribution or abundance of the species to which they belong.

³Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2010 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided.

Table G.2: Relevant Site Designation Legislation

Site designation	Legislation	Offences	Licensing procedures and guidance
Local Nature Reserve (LNR)	National Parks and Access to the Countryside Act 1949 S.21	LNRs are given protection through policies in the Local Development Plan.	LNRs are generally owned and managed by local authorities. Development proposals that would potentially affect a LNR would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Guidance documents: The National Planning Policy Framework (Department for Communities and Local Government, March 2012), with particular reference to Policy 11, and the joint Circular.
Local Sites (eg Local Wildlife Sites, Sites of Importance for Nature Conservation)	There is no statutory designation for local sites.	Local sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a local site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged.

Site designation	Legislation	Offences	Licensing procedures and guidance
			Guidance documents: The National Planning Policy Framework (Department for Communities and Local Government, March 2012), with particular reference to Policy 11, and the joint Circular.

Table G.3: Relevant Habitat and Species Legislation

Habitats and species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	Natural Environment & Rural Communities Act 2006 S.40	<p>S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State for England, in consultation with Natural England, are referred to in S.41 of the NERC Act for England. The list, known as the 'England Biodiversity List', of habitats and species can be found on the Natural England web site.</p> <p>The 'England Biodiversity List' is used as a guide for decision makers such as public bodies, including local and regional authorities, in implementing their duty under Section 40 of the NERC Act 2006 to have regard to the conservation of biodiversity in England when carrying out their normal functions.</p> <p>Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.</p>

Appendix H. Road Drainage and the Water Environment

H.1 Planning and policy context

European policy

Water Framework Directive (WFD) (2000/60/EC)

- H.1.1 The WFD requires that all inland waters within defined river basin districts must reach at least good status by 2015 and defines how this should be achieved through the establishment of environmental objectives and ecological targets for surface waters. Any new scheme must not cause deterioration of the water environment or prevent the future attainment of good status

Environmental Quality Standards Directive (2008/105/EC)

- H.1.2 Lists environmental quality standards (EQS) for priority substances and certain other pollutants as provided for in Article 16 of the Water Framework Directive 2000/60/EC (WFD), with the aim of achieving good surface water chemical status. It includes certain metals that are associated with runoff from highways

Groundwater Directive (2006/118/EC)

- H.1.3 Complements the WFD. It requires measures to prevent or limit inputs of pollutants into groundwater to be operational so that WFD environmental objectives can be achieved

Habitats Directive (92/43/EEC)

- H.1.4 To promote the maintenance of biodiversity by taking measures to maintain or restore natural habitats and wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance. Sites or species that come under this Directive will heighten the importance of water features that sustain them.

Floods Directive (2007/60/EC)

- H.1.5 The aim of this Directive is to reduce and manage the risks that floods pose to human health, the environment, cultural heritage and economic activity. It sets the strategic level for flood risk that any development will need to comply with.

National policy

National Policy Statement for National Networks (NN NPS)

- H.1.6 Paragraph 5.99 of the NN NPS states that the Secretary of State:

- H.1.7 'should be satisfied that flood risk will not be increased elsewhere and only consider development appropriate in areas at risk of flooding where (informed by a flood risk assessment, following the Sequential Test and, if required, the Exception Test), it can be demonstrated that:

- Within the site, the most vulnerable development is located in areas of lowest flood risk unless there are overriding reasons to prefer a different location; and
- Development is appropriately flood resilient, including safe access and escape routes where required, and that any residual risk can be safely managed including by emergency planning; and priority is given to the use of sustainable drainage systems'.

H.1.8 Paragraph 5.222 concerns projects that seek to improve existing infrastructure, such as road widening, with emphasis on taking opportunities to 'improve upon the quality of existing discharges where these are identified and shown to contribute towards Water Framework Directive commitments'.

H.1.9 Para. 5.225 outlines that the Secretary of State will generally need to give impacts on the water environment more weight where a project would have adverse effects on the achievement of environmental objectives established under the Water Framework Directive.

H.1.10 Paragraph 5.226 sets out that a proposal should have regard to the River Basin Management Plans and the requirements of the Water Framework Directive (including Article 4.7) and its daughter directives, including those on priority substances and groundwater. Mitigation measures in respect of the adverse effects are likely to be the subject of requirements attached to the development consent and/or planning obligations.

National Planning Policy Framework (NPPF)

H.1.11 Paragraph 100 in the section on 'Meeting the challenge of climate change, flooding and coastal change' requires that 'Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere'.

H.1.12 Para. 109 states that new development should not contribute to unacceptable levels of water pollution.

H.1.13 Building on the NPPF, planning practice guidance (published March 2014) advises on how to take account of and address the risks associated with flooding in the planning process. Planning practice guidance published in March 2015 provides further guidance on protecting water quality.

National Planning Practice Guidance (NPPG) 2014

H.1.14 Policy 10: Meeting the challenge of Climate Change, Flooding and Coastal Change.

H.1.15 Policy 11: Conserving and Enhancing the Natural Environment.

H.1.16 In 2014, accompanying the NPPF, the National Planning Practice Guidance (NPPG) (DCLG, 2014) was published. This advises on how Local Planning Authorities can ensure water quality and the delivery of adequate water infrastructure and take account of the risks associated with flooding in the planning and the planning application process

Antipollution Works Regulations (1999)

- H.1.17 Where pollution occurs or is likely to occur the Environment Agency can serve a works notice under Section 161A of the Water Resources Act on any person who has caused or knowingly permitted the pollution (or risk of pollution) to a water course, requiring them to carry out anti-pollution / preventative works and operations. The Environment Agency can also recover the costs of any investigation and anti-pollution works carried out. The Anti-Pollution Works Regulations prescribe the content of anti-pollution works notices. They also prescribe the particulars of such matters as are required to be placed on the pollution control registers maintained by the Environment Agency

Environment Act (1995)

- H.1.18 The Act provides for the establishment of a body corporate to be known as the Environment Agency, the key regulator for the water environment

Environmental Damage (Prevention and Remediation) Regulations (2015)

- H.1.19 The emphasis of these Regulations is proactively putting in place appropriate pollution prevention measures to reduce risks to the environment

Environmental Protection Act (1990)

- H.1.20 This act brings in a system of integrated pollution control for the disposal of wastes to land, water and air

Flood Risk Regulations (2009) Amended SI2011/2880 transpose directive 2007/60/EC

- H.1.21 These regulations aim to provide a consistent approach to managing flood risk. The Environment Agency are responsible for managing flood risk from main rivers, the sea and reservoirs. LLFAs are responsible for local sources of flood risk, in particular surface water, groundwater and ordinary watercourses

Flood and Water Management Act 2010 and Commencement Orders

- H.1.22 The key areas covered by this Act are: the roles and responsibilities for flood and coastal erosion risk management; improving reservoir safety

Groundwater (England and Wales) Regulations (2009)

- H.1.23 These transpose the Groundwater Directive (2006/118/EC) into law in England & Wales. These powers are implemented in though the Environmental Permitting Regulations (2016)

Highways Act 1980 (HA 1980)

- H.1.24 The act deals with the management and operation of the road network in England and Wales including the drainage of highways into environmental waters and sewers.

The Environmental Permitting (England and Wales) Regulations 2016

- H.1.25 Provide a consolidated system of environmental permitting in England and Wales and transpose provisions of fifteen EU Directives which impose

obligations requiring delivery through permits or which are capable of being delivered through permits. Covers Environment Agency permits for flood risk (on Main River) and certain discharges to watercourses.

The Water Resources (Environmental Impact Assessment) (England and Wales) Regulations 2003

- H.1.26 Impose procedural requirements in relation to the consideration of applications or proposals for an abstraction or impounding licence under Chapter II of Part II of the Water Resources Act 1991 and require consent in other cases.

Water Act 2003 and Water Act 2014

- H.1.27 Aims to improve water conservation, protect public health and the environment, and improve the service offered to consumers. The Act is in three parts relating to water resources, regulation of the water industry and other provisions.

Water Framework Directive (Standards and Classification) Directions (England and Wales) 2015

- H.1.28 These Directions set out the environmental standards to be used for the second cycle of river basin plans. They transpose Directive 2013/39/EC on environmental quality standards for priority substances.

Water Industry Act (1991) (Amendment) (England and Wales) Regulations (2009)

- H.1.29 Sets out the responsibilities of the Environment Agency of England and Wales in relation to water pollution, resource management, flood defence, fisheries, and in some areas, navigation. The Act regulates discharges to controlled waters, namely rivers, estuaries, coastal waters, lakes and groundwaters

Water Resources Act 1991

- H.1.30 Act to regulate water resources, water quality and pollution, and flood defence. Sets out standards for Controlled Waters.

Water Environment (Water Framework Directive) (England and Wales) Regulations 2003

- H.1.31 Outline the duties of regulators (Environment Agency in England) in relation to environmental permitting, abstraction and impoundment of water.

The Land Drainage Act 1991

- H.1.32 Requires that a watercourse be maintained by its owner in such a condition that the free flow of water is not impeded. The 1994 Act amends it in relation to the functions of internal drainage boards and local authorities.

The Control of Pollution (Oil Storage) (England) Regulations 2001

- H.1.33 Applicable for the storage of more than 200 litres of oil above ground at an industrial, commercial or institutional site. The Regulations apply only in England only

Regional policy

The London Plan (2016)

- H.1.34 In terms of drainage, Policy 5.13 states that development should ‘utilise sustainable urban drainage systems (SUDS) unless there are practical reasons for not doing so’. The Policy goes on to state that drainage should be ‘designed and implemented in ways that deliver other policy objectives of this Plan, including water use efficiency and quality, biodiversity, amenity and recreation’.
- H.1.35 Policy 5.12 (Flood Risk Management) outlines that development proposals must comply with NPPF and associated Technical Guidance and will need to address various criteria (including that it addresses flood resilient design and emergency planning by demonstrating that the development will remain safe and operational under flood conditions).
- H.1.36 Policy 7.28 requires developments to restore and enhance the Blue Ribbon Network, London’s strategic network of waterspaces, and sets a range of criteria including protecting open character of the Blue Ribbon Network and resisting the impounding of rivers.

Essex Local Transport Plan (2011)

- H.1.37 Section 5.3.3 focuses on the protection and enhancement of the natural, historic and built environment. Specifically relating to water issues, the County Council state they will take steps to ensure that potential side-effects from new transport infrastructure on the environment are prevented, by methods such as minimising impacts on water courses, by ‘ensuring that new transport infrastructure is designed to minimise the possible impact of storm water runoff and by implementing Sustainable Drainage Systems where appropriate’.

Local policy

London Borough of Havering Core Strategy 2008

- H.1.38 Policy DC51 includes objectives such as water efficiency (greywater and rainwater), adequate foul drainage, sewerage treatment and evidence that the development would not contribute to problems for existing users. As a result of this, permission will only be granted where there is no ‘adverse impact on water quality, water courses, groundwater, surface water or drainage systems unless suitable mitigation measures can be secured’.
- H.1.39 Policy CP15, concerning Environmental Management, addresses the need for new development to ‘reduce their environmental impact and to address the causes and adapt to and mitigate the effects of climate change in their location’. The policy goes on to state that new development should:
- Minimise their use of natural resources, including the efficient use of land;
 - Reduce and manage fluvial, tidal and surface water and all other forms of flood risk through spatial planning, implementation of emergency and other strategic plans and development control policies;
 - Have a sustainable water supply and drainage infrastructure; and
 - Avoid an adverse impact on water quality.

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- H.1.40 Policy 32 outlines the Council's support for development which 'seeks to avoid flood risk to people and property and manages residual risk by applying the Sequential Test and, if necessary, the Exception Test as set out in the NPPF'. Furthermore, the Council will require site-specific flood risk assessments for development on sites where drainage problems have been identified by the Council, alongside the reduction of surface water runoff through the provision of sustainable drainage systems (SuDS), 'unless there are practical reasons for not doing so'.

Brentwood Replacement Local Plan (2005)

- H.1.41 The Brentwood Local Plan reinforces the overarching policy of promoting the use of SuDS as part of development, in order to manage the 'quality and quantity of surface water run off'. Paragraph 10.29 directs development to 'reduce water pollution and flood risk relative to conventional urban drainage systems'. Policy IR5 confirms this, stating that new development proposals should 'encourage water conservation'.

Brentwood Draft Local Plan (January, 2016)

- H.1.42 Policy 5.1, regarding spatial strategy, states that 'all development sites will be identified having regard to whether they will have no significant impact on a number of factors, which include flood risk. Furthermore, general development criteria policy 6.3 outlines the need for development to have 'no unacceptable effect on health, the environment or amenity due to the release of pollutants to land, water or air'.
- H.1.43 Policy 8.5, 'Supporting the Rural Economy', states the Council will 'promote a sustainable rural economy by' supporting proposals which 'have no unacceptable effect on water quality or flooding, watercourses, biodiversity or important wildlife habitats'.
- H.1.44 Policy 10.3, referring to sustainable construction and energy, requires all development proposals to incorporate water conservation measures, incorporate suitable Sustainable Urban Drainage Systems (SuDs) and to submit a Water Sustainability Assessment. Furthermore, where this is not possible, applicants must 'demonstrate compelling reasons and provide evidence' as to why these standards could not be met.
- H.1.45 In terms of flood risk, Policy 10.13 outlines the need for proposals to avoid flood risk by 'applying the Sequential Test and, if necessary, the Exception Test. Furthermore, new development should use opportunities to 'reduce the causes and impacts of flooding'. Also, 'where development is permitted within flood risk areas it must demonstrate that, where required, it will reduce fluvial and surface water flood risk and manage residual risks through appropriate flood mitigation measures including emergency planning and response.'
- H.1.46 Policy 10.14, concerning sustainable drainage, outlines the requirement for development to incorporate SuDS to avoid flood risk or adverse impacts on water quality. Standards should be met on quantity, in regard to decreasing runoff rates. Quality standards must be met through 'green roofs, permeable paving and swales' so that rainfall runoff in events up to 10mm does not leave the site. The policy also outlines the preferred hierarchy managing surface water

drainage from any development. Firstly, infiltration. Secondly, attenuation and discharge to watercourses. Thirdly, if these cannot be met, water should be discharged to surface water only sewers.

- H.1.47 Finally, Policy 10.15, regarding contaminated land and hazardous substances, states that development proposals will only be granted where ‘there will be no adverse impact on the environment and quality of local groundwater or surface water quality’.

Appendix I. Landscape and Visual

I.1 Planning and policy context

European Landscape Convention

- I.1.1 The European Landscape Convention (Florence, 2000) sets out an internationally agreed definition of landscape: “The landscape is part of the land, as perceived by local people or visitors, which evolves through time as a result of being acted upon by natural forces and human beings”. It also sets out the key actions that countries should follow and provides an integrated, holistic approach and international context for landscape, under the headline banner that “All Landscapes Matter”. The convention is a treaty between states (not an EU Directive) and seeks to influence governments’ decisions rather than direct them. Signed by the UK government in 2006, it came into effect in March 2007

National policy

National Planning Policy Framework (NPPF)

- I.1.2 The NPPF sets out the Government planning policies for England and how these are expected to be applied. The NPPF sets out a clear presumption in favour of sustainable development, which should be seen as a ‘golden thread’ running through plan making and decision taking.
- I.1.3 The NPPF sets out 13 aspects relating to the delivery of sustainable development, including “*Conserving and enhancing the natural environment*” which is of particular importance to the Scheme. These core aims are designed to guide and influence local authorities in developing their local plans, demonstrating the government’s commitment to ensure the planning system does everything it can to support sustainable economic growth.
- I.1.4 Paragraph 109 states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes. As with biodiversity, protection should be commensurate with their status.
- I.1.5 Paragraph 110 states that, in preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Plans should allocate land with the least environmental or amenity value, where consistent with other policies in this Framework.
- I.1.6 Paragraph 125 encourages good design to limit impact of light pollution from artificial light on local amenity and local environment.
- I.1.7 Building on the NPPF, planning practice guidance published in March 2014 provides more guidance on the importance of design. Further planning practice guidance also published in March 2014 provides more guidance on addressing light pollution through the planning system.

National Policy Statement for National Networks (NN NPS)

- I.1.8 Paragraph 4.29 states that 'Visual appearance should be a key factor in considering the design of new infrastructure, as well as functionality, fitness for purpose, sustainability and cost. Applying 'good design' to national network projects should therefore produce sustainable infrastructure sensitive to place, efficient in the use of natural resources and energy used in their construction, matched by an appearance that demonstrates good aesthetics as far as possible'.
- I.1.9 Paragraph 5.144 states that 'where the development is subject to EIA the applicant should undertake an assessment of any likely significant landscape and visual impacts in the environmental impact assessment and describe these in the environmental assessment'. This should include reference to any landscape character assessment and any relevant policies based on these assessments in local development documents in England.
- I.1.10 The assessment should include visibility and conspicuousness of the project during construction and of the presence and operation of the project and potential impacts on views and visual amenity. This should include any noise and light pollution effects, including on local amenity, tranquillity and nature conservation.
- I.1.11 Paragraph 5.156 outlines that local landscape designations should not be used in themselves as reasons to refuse consent, as this may unduly restrict acceptable development. However, developments should be carefully designed and seek to avoid or minimise harm to the landscape.
- I.1.12 The Secretary of State will want to judge whether visual effects on a sensitive receptor outweighs the benefits of development.
- I.1.13 The NPS requires schemes to mitigate adverse landscape and visual effects through appropriate siting, design and landscape scheme. The NPS also states that where necessary schemes should include appropriate mitigation measures to address adverse effects on national trails, other rights of way and open access land.
- I.1.14 Paragraph 5.85 sets out that the quantity and type of emissions should be identified along with the nearest receptors and any mitigation measures. The NPS recognises that major infrastructure may create artificial light emissions and advises these should be kept to a minimum and to an acceptable level.

Further National legislation

- I.1.15 Key relevant national legislation for the Scheme includes:
- The Town and Country Planning Act 1990;
 - The Countryside and Rights of Way Act 2000; and
 - The Planning Act 2008, specifically:
 - Part 7 - Orders granting development consent (including "Public Rights of Way" and "Development of Green Belt land"); and
 - Schedule 8 - Tree Preservation Orders: further amendments.

- I.1.16 These pieces of legislation are particularly relevant to landscape as they provide legislative control relating to managing the landscape resource, access to the countryside, and conservation.

Regional policy

London Plan (2016)

- I.1.17 In respect of local character Policy 7.4 requires development to have regard to the form, function, and structure of an area, place or street and the scale, mass and orientation of surrounding buildings. It should improve an area's visual or physical connection with natural features. In areas of poor or ill-defined character, development should build on the positive elements that can contribute to establishing an enhanced character for the future function of the area.
- I.1.18 Policy 7.16 (Green Belt) supports the current extent of London's Green Belt, its extension in appropriate circumstances and its protection from inappropriate development.
- I.1.19 Policy 7.21 (Trees and Woodland) seeks to retain existing trees of value and any loss should be replaced.
- I.1.20 Further details of these policies are provided in Table F.1 in Appendix F.

Essex Local Transport Plan (LTP) (2011)

- I.1.21 In regard to 'protecting the natural environment, the Essex LTP states that potential side effects from new transport infrastructure will be prevented by 'ensuring that infrastructure has minimal impact upon the landscape in which it is situated, through the use of appropriate visual screening and planting'.

Local policy

London Borough of Havering Core Strategy 2008

- I.1.22 Policy DC71 states that the 'character of historic parks and Common Land will be protected or enhanced giving particular attention to the protection of views to and from common land and other historic landscapes'.
- I.1.23 Land to the north west of the junction lies within the Havering Ridge Area of Special Character. Policy DC69 states that the Council will seek to preserve the special character of Havering Ridge including protecting views to and from the area.
- I.1.24 Policy CP15 states that in order to 'reduce their environmental impact and to address the causes and adapt to and mitigate the effects of climate change in their location, construction and use new development should minimise their use of natural resources, including the efficient use of land'.
- I.1.25 In terms of trees and woodland, Policy DC60 states that the 'amenity and biodiversity value afforded by trees and woodland will be protected and improved by:'
- 'Where appropriate, retaining trees of nature conservation and amenity value and making tree preservation orders';

- ‘Ensuring that adequate measures are put in place when granting planning permission to protect trees during construction works’;
- ‘Supporting the implementation of the Thames Chase Plan and ensuring that, development within the area makes a positive contribution towards its implementation’; and
- Not granting planning permission for development that would adversely affect ancient and secondary woodland.’

I.1.26 Regarding urban design, through maintaining, enhancing and improving the character and appearance of the local area, Policy DC61 addresses the need for development to:

- ‘Harness the topographical and ecological character of the site’;
- ‘Respect the scale, massing and height of the surrounding physical context’;
- Utilise and protect existing views;
- ‘Complement or improve the amenity and character of the area through its appearance, materials used, layout and integration with surrounding land and buildings’; and
- ‘Create or enhance and clearly define the public and private realms’.

I.1.27 Policy DC56 states that planning permission for development including artificial lighting will only be granted where it does not have a negative impact on the amenity of residents or public safety. Planning conditions may be used to control the level of luminance, glare, spillage, angle, type of lighting and hours of operation. Applicants are encouraged to use low energy lighting to limit the disturbance to wildlife.

I.1.28 Further relevant policies of the London Borough of Havering's Core Strategy are listed below, with details provided in Table F.2 in Appendix F:

- Policy CP14 - Green Belt;
- Policy DC32 - The Road Network;
- Policy DC34 - Walking;
- Policy DC35 - Cycling;
- Policy DC45 - Appropriate Development in the Green Belt; and
- Policy DC60 - Trees and Woodlands.

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I.1.29 Paragraph 11.1.2 states that, whilst 'new development provides the opportunity to enhance the character of an area' through 'reinforcing, repairing and adding to the positive aspects of the built environment', it should seek to 'optimise the distinctive character of the existing buildings, landscape and topography, and incorporate the principles of 'Secured by Design''. The Plan reinforces the principle that great care should be taken 'when incorporating contemporary design into the existing urban fabric'.

London Borough of Havering Supplementary Planning Documents

- I.1.30 The London Borough of Havering adopted a Landscaping Supplementary Planning Document (SPD) in July 2011. This provides relevant guidance on producing landscape schemes to support planning applications for development.
- I.1.31 The Borough also adopted an SPD in April 2009 entitled 'Protection of Trees during Development' providing further detail on how Development Control Policy DC60 (Trees and Woodlands) is to be implemented.

Brentwood Replacement Local Plan (2005)

- I.1.32 Policy CP1 paragraph i states that any development will need to demonstrate that the proposal 'would not have an unacceptable detrimental impact on visual amenity, or the character and appearance of the surrounding area'. Furthermore, paragraph iii states that the proposal 'should be of a high standard of design and layout and should be compatible with its location and any surrounding development'.
- I.1.33 In terms of transport pollution, Policy PC6 includes the stance that all proposals will be 'assessed against their impact' on visual amenity, amongst other criteria. This is due to the need to 'minimise any negative impacts and, where necessary, incorporate reasonable and appropriate mitigation measures'.
- I.1.34 Policy C4, Management of Woodlands, outlines the requirement for development to retain existing woodlands with 'management appropriate to age, use, location and scientific interest'. The policy goes on to state that 'visual amenity, historical and ecological values of the woodland should be safeguarded and, where possible, enhanced'. Policy C5 outlines a similar stance concerning the 'retention and provision of landscaping and natural features in development'.
- I.1.35 Policy C8 states the requirement for a landscape character assessment to be prepared for the Brentwood Borough Council administrative area. This includes the identification of the 'particular character of different localities within the countryside.
- I.1.36 In terms of landscape, Policy C12 directs development to 'contribute positively towards the restoration of its original character'. The Council has issued this policy to improve 'rural as well as urban areas by providing advice on developing landscape improvement schemes'.
- I.1.37 Further details of these policies are provided in Table F.3 in Appendix F.

Brentwood Draft Local Plan (January, 2016)

- I.1.38 Spatial Strategy policy 5.1 makes reference to landscape and visual amenity, particularly where it is stated that sites will be identified having regard to whether they will 'have no significant impact on the Green Belt, visual amenity, heritage, transport and environmental quality including landscape, wildlife, flood-risk, air and water pollution'.
- I.1.39 Policy 9.1 states the Council's commitment to 'safeguarding the diversity and local distinctiveness of the Borough, including its varied landscapes, heritage, biodiversity and habitats'. Specifically, individual proposals will be assessed by the extent to which 'character, significance, and setting of Listed Buildings, Historic Parks and Gardens, and Protected Lanes' are protected.

- I.1.40 Policy 9.3 relates to the protection of landscape and the management of woodland. The policy states that, where appropriate, proposals are required to be accompanied by:
- An ecological survey appropriate to nature and scale of the proposal;
 - A landscape scheme detailing new planting requirements and where appropriate, replacement trees;
 - An arboricultural assessment justifying for the removal of trees or hedgerows;
 - Details of landscaping maintenance arrangements; and
 - A method statement for any land raising and/or dispersal of excavated or dredged materials.
- I.1.41 Policy 10.4 requires development to be high quality and well designed in its own right. New development should acknowledge and be sympathetic to its context, reinforcing local distinctiveness and sense of place. All development proposals must be fit for their purpose, appropriate for and responsive to their site and setting, be adaptable and responsive for long term use and create successful relationships with existing development. Design and landscaping should contribute positively towards the creation of high quality, attractive development where people choose to live, work and visit, and safer by design.
- I.1.42 Policy 10.6, concerning high quality design principles, states that 'successful design is founded upon an understanding and respect for an area's unique built, natural and cultural context'. Furthermore, the policy supports proposals which 'promote permeable, accessible and easily understandable places'.
- I.1.43 Policy 10.12 states that proposals which involve floodlighting or illumination will require applicants to submit a full lighting strategy, 'proportionate to their application, specifying details of lights, their power and type, overall level and distribution of illumination and times of operation'.

Table I.1: Relevant policies from The London Plan, the spatial development strategy for London consolidated with alterations since 2011 (March 2016)

Planning Policies	Summary of Policy Content
Policy 7.16 Green Belt	<p>“Strategic</p> <p>A. The Mayor strongly supports the current extent of London’s Green Belt, its extension in appropriate circumstances and its protection from inappropriate development.</p> <p>Planning decisions</p> <p>B. The strongest protection should be given to London’s Green Belt, in accordance with national guidance. Inappropriate development should be refused, except in very special circumstances. Development will be supported if it is appropriate and helps secure the objectives of improving the Green Belt as set out in national guidance.”</p>
Policy 7.21 Trees and Woodlands	<p>“A Trees and woodlands should be protected, maintained, and enhanced, following the guidance of the London Tree and Woodland Framework (or any successor strategy). In collaboration with the Forestry Commission the Mayor has produced supplementary guidance on Tree Strategies to guide each borough’s production of a Tree Strategy covering the audit, protection, planting and management of trees and woodland. This should be linked to a green infrastructure strategy.</p> <p>Planning decisions</p> <p>B Existing trees of value should be retained and any loss as the result of development should be replaced following the principle of ‘right place, right tree’[1]. Wherever appropriate, the planting of additional trees should be included in new developments, particularly large-canopied species.</p> <p>LDF preparation</p> <p>C Boroughs should follow the advice of paragraph 118 of the NPPF to protect ‘veteran’ trees and ancient woodland where these are not already part of a protected site.</p> <p>D Boroughs should develop appropriate policies to implement their borough tree strategy.”</p>

Table I.2: London Borough of Havering Local Development Framework, Core Strategy and Development Control Policies (adopted 2008)

Planning Policies	Summary of Policy Content
Policy CP14 Green Belt	The boundary of the Green Belt is shown on the Proposals Map.
Policy DC32	“New development which has an adverse impact on the functioning of the road hierarchy will not be allowed.

Planning Policies	Summary of Policy Content
The Road Network	<p>Planning permission for new road schemes will only be allowed where they:</p> <ul style="list-style-type: none"> are consistent with the Council’s road hierarchy; improve conditions for pedestrians and cyclists and disabled people by providing safe and convenient facilities; improve public transport accessibility; have net environmental benefits; improve safety for all users; contribute to regeneration objectives;” <p>are consistent with the Council’s Local Implementation Plan and the Mayor of London’s Transport Strategy;</p> <p>allocate street space in accordance with the London Plan;</p> <p>Contributions may be sought from developers towards new road schemes or road improvements.</p>
Policy DC34 - Walking	<p>“In the design and location of access and circulation arrangements within, and between, development and local pedestrian destinations, developers will be required to:</p> <ul style="list-style-type: none"> take account of the needs of pedestrians; address ‘desire lines’ to local shops, services and schools, including safer routes to school, and public transport nodes, lighting, rest facilities, safety and security, and barriers to local movement; <p>In appropriate circumstances, contributions will be sought towards initiatives either planned, or underway, to promote walking in the borough as included in Havering’s Local Implementation Plan, and the strategic walking routes set out in the Transport for London Walking Plan including the Greenways. This includes the implementation of a continuous Thames Path across the borough which increases access to the Thames frontage.</p> <p>Where relevant, contributions may also be sought towards increasing pedestrian accessibility between the development and important local facilities including shops and services and local public transport nodes, for example crossings, drop kerbs, tactile paving, lighting and so on.</p> <p>This would include contributions toward improving the pedestrian environment at transport interchanges including stations and bus stops.</p> <p>In major new developments used by the public the provision of public conveniences may be sought on site or contributions to off-site Universal Super Loos in line with the Council’s Street Environment Maintenance and Management Plan.”</p>
Policy DC35 - Cycling	<p>“The design and layout of developments will be required to take account of the needs of cyclists by:</p> <ul style="list-style-type: none"> encouraging safe and secure cycle parking and changing and shower facilities to be provided appropriate to the nature and scale and location of the development; encouraging the design and location of access and circulation arrangement of the development to take account of the needs of cyclists; <p>In major new development encouraging cycle priority measures which link with existing routes and networks; and</p>

Planning Policies	Summary of Policy Content
	<p>where appropriate seeking contributions towards off-site improvements to the cycle network and cycle facilities including facilities at key public transport nodes and destinations and contributions towards the London Cycle Network Plus and Thames Chase Forest Circle. Applicants will be required to provide cycle parking to the standards provided in Annex 6 from Transport for London.</p> <p>In applying this policy regard will be had to the London Cycling Action Plan ‘Creating a chain reaction’, and the London Cycle Design standards and other relevant documents.”</p>
<p>Policy DC45 – Appropriate Development in the Green Belt</p>	<p>“The Council will promote uses in the Green Belt that have a positive role in fulfilling Green Belt objectives. Planning permission for development in the Green Belt will only be granted if it is for the following purposes: agriculture and forestry, outdoor recreation, nature conservation, cemeteries; mineral extraction provided policies in the Council’s Local Development Framework are complied with Park and Ride facilities provided that the criteria in Annex E of PPG13 are met.</p> <p>Planning permission for new buildings will only be granted for the following purposes: they are essential for the uses listed above; or they involve limited infilling or redevelopment on a site designated as a Major Developed Site in accordance with DC46</p> <p>Extensions, alterations and replacement of existing dwellings will be allowed provided that the cubic capacity of the resultant building is not more than 50% greater than that of the of the original dwelling.</p> <p>Planning permission for the reuse of existing buildings will only be granted if the criteria set out in PPG2 are satisfied. Particular care will be taken to ensure that the proposed use (including the use of any adjoining land) does not have a greater impact on the openness of the Green Belt.</p> <p>Subject to the Departure procedure, planning permission for the redevelopment of authorised commercial/industrial sites will be granted provided there is a substantial decrease in the amount of building on the site and improvements to the local Green Belt environment.”</p>
<p>Policy DC60 – Trees and Woodlands</p>	<p>“The amenity and biodiversity value afforded by trees and woodland will be protected and improved by: where appropriate, retaining trees of nature conservation and amenity value and making tree preservation orders; ensuring that adequate measures are put in place when granting planning permission to protect trees during construction works; supporting the implementation of the Thames Chase Plan and ensuring that, development within the area makes a positive contribution towards its implementation; and not granting planning permission for development that would adversely affect ancient and secondary woodland.”</p>
<p>Policy DC69 – Other areas of special townscape or</p>	<p>“Planning permission will only be granted if it maintains, or enhances, the special character of: the Emerson Park Policy Area which is typified by large and varied dwellings set in spacious mature, well landscaped grounds; the Hall Lane Policy Area which is typified by large detached and semi-detached dwellings set in large gardens with considerable tree and shrub planting;</p>

Planning Policies	Summary of Policy Content
landscape character	<p>the Gidea Park Special Character Area which is derived from the quality of its urban design and architectural detailing and also its locally important heritage and historical associations.</p> <p>Detailed criteria for dealing with planning applications in these areas will be contained within three separate SPDs.</p> <p>The Council will also seek to preserve the special character of Havering Ridge including protecting views to and from the area.”</p>

Table I.3: Relevant local policies of the Brentwood Replacement Local Plan (adopted August 2005)

Planning Policies	Summary of Policy Content
<p>Policy CP1 General Development Criteria</p>	<p>“Any development will need to satisfy all of the following:</p> <ul style="list-style-type: none"> i) the proposal would not have an unacceptable detrimental impact on visual amenity, or the character and appearance of the surrounding area. ii) the proposal would not have an unacceptable detrimental impact on the general amenities of nearby occupiers or the occupiers of the proposed development by way of overlooking, lack of privacy, overbearing effect or general disturbance. iii) the proposal should be of a high standard of design and layout and should be compatible with its location and any surrounding development (and, in the case of alterations and extensions, with the existing building), in terms of size, siting, scale, style, design and materials. iv) means of access to the site for vehicles and pedestrians and parking and servicing arrangements are satisfactory. v) the transport network can satisfactorily accommodate the travel demand generated and traffic generation would not give rise to adverse highway conditions or highway safety concerns or unacceptable loss of amenity by reason of number or size of vehicles. vi) the proposal should not give rise to the net loss of a residential unit (except as provided for in policy tc19).”
<p>Policy GB1 New Development</p>	<p>“Within the green belt, as defined on the proposals map, planning permission will not be given, except in very special circumstances, for changes of use of land or the construction of new buildings or extension of existing buildings, for purposes other than those appropriate to a green belt, or for the re-use of existing buildings that do not comply with the criteria set out in policies gb15 and gb16.</p>
<p>GB2 Development Criteria</p>	<p>When considering proposals for development in the green belt, the local planning authority will need to be satisfied that they do not conflict with the purposes of including land in the green belt and do not harm the openness of the green belt. the precedent created by allowing even an individually innocuous or well-merited proposal which cumulatively would undermine green belt objectives will be taken into account. account will also be taken of the following:</p> <ul style="list-style-type: none"> i) the effect of proposals on public rights of way ii) the need to preserve or enhance existing landscape features iii) any building must be satisfactorily located in respect of the surrounding landscape and any adjoining buildings.”

Planning Policies	Summary of Policy Content
Policy C4 Management of Woodlands	“Existing woodlands should be retained with management appropriate to age, use, location and scientific interest. in any management scheme it is essential that the visual amenity, historical and ecological values of the woodland are safeguarded, and, where possible, enhanced.”
Policy C5 Retention and Provision of Landscaping and Natural Features in Development	<p>“In proposals for development, existing trees, hedges, woods, ponds, watercourses and other natural features should be retained, with new landscape works required to enhance any new development.</p> <p>satisfactory measures must be taken prior to the start of any development to protect landscape features during development.</p> <p>all development schemes must be accompanied by:</p> <ul style="list-style-type: none"> (i) a site survey showing existing landscape and natural features and existing ground levels (ii) a plan showing all the existing trees and landscape and natural features to be retained and any trees or features proposed to be felled or otherwise affected by the development (iii) a plan showing proposals for all new tree planting or other landscaping work, including proposed finished ground levels (iv) a method statement for arboricultural work on site <p>development schemes should also consider opportunities for additional habitat creation in any proposals.”</p>
Policy C12 Landscape Improvements	<p>“The council will, in conjunction with its countryside management service, seek to encourage local land owners to implement schemes to improve the environment through planting, habitat creation, improved public access, management agreements and other measures, whilst also implementing its own programme of environmental improvement schemes throughout both the urban and rural areas of the borough.</p> <p>Within the landscape improvement area, as defined on the proposals map, any development proposals will be expected to contribute positively towards the restoration of its original character.”</p>

Table I.4: Landscape impact assessment table

Landscape Designations	Landscape Character Areas	Local Landscape Character	Landscape Sensitivity	Magnitude of Impact(s)		Significance of Effect(s)	
				Construction	Operation	Construction	Operation
The Study area is wholly located within a Site of Special Scientific Interest (SSSI) Impact Risk	The Scheme is within Northern Thames Basin National Character Area (111) as defined by Natural	Junction 28 is set within blocks of Ancient and semi-natural Woodland, small-scale pastoral and arable	The landscape comprises commonplace elements and features that create a generally unremarkable	While both landform and the degree of vegetation cover would generally preclude impacts on the landscape character to the	While both landform and the degree of vegetation cover would generally preclude impacts on the	Moderate adverse	Moderate adverse

Landscape Designations	Landscape Character Areas	Local Landscape Character	Landscape Sensitivity	Magnitude of Impact(s)		Significance of Effect(s)	
				Construction	Operation	Construction	Operation
<p>Zone (IRZ) and a Nitrate Vulnerable Zones 2013 Designation (Surface Water), and lays partially within the Green Belt as adopted by the London Borough of Havering and Brentwood Borough Council.</p> <p>Thames Chase Community Forest, bisected by the M25, lies to the south of Junction 28 and abuts the A12 to the west of the junction and the A1023/ Brook Street to the east of the junction.</p>	<p>England, and within the Weald Wooded Farmland and Great Warley Wooded Farmland landscape character areas as defined by the Braintree, Brentwood, Chelmsford, Maldon And Uttlesford Landscape Character Assessment (Chris Blandford Associates, Sept 2006).</p> <p>In summary, the landscape of the M25 north of Junction 28 and the land to the northwest of Brentwood is characterised by wooded rolling hills and slopes, narrow, tree-lined roads, and</p>	<p>fields bounded by hedgerows with intermittent trees, and by linear woodland belts. Semi-mature woodland belts are largely present along the entry and exit slip roads of the M25, as well as along the A12 east and west of the junction towards the fringes of the built-up areas of Brentwood (approximately 700m to the north-east of the junction) and Romford (approximately 800m to the south-west of the junction) respectively.</p> <p>Between these urban areas, there are some linear settlements along local road corridors, specifically along</p>	<p>character, but with some sense of place. Statutory and local designations are present, as are features of value through use, perception or historic and cultural associations. Some features and elements of the landscape could not be replaced.</p> <p>The nature of the landscape character would be able to partly accommodate change of the type proposed by all Options.</p> <p>The landscape is Moderately sensitive to change.</p>	<p>north, east and south, construction of the loop and slip roads to the west of J28 would cause noticeable damage to field patterns, and partial loss/ noticeable damage to the distinctive landscape element of Alder Woodland, and also to areas of vegetation local to the highway corridor.</p> <p>The magnitude of these temporary landscape impacts is likely to be Moderate Adverse.</p>	<p>landscape character to the north, east and south, construction of the loop and slip roads to the west of J28 would cause noticeable damage to field patterns, and partial loss/ noticeable damage to the distinctive landscape element of Alder Woodland, and also to areas of vegetation local to the highway corridor.</p> <p>The magnitude of these permanent landscape impacts is likely to be Moderate Adverse.</p>		

Landscape Designations	Landscape Character Areas	Local Landscape Character	Landscape Sensitivity	Magnitude of Impact(s)		Significance of Effect(s)	
				Construction	Operation	Construction	Operation
<p>The Manor (Local Nature Reserve) is, to all intents and purposes, located wholly within the study area across two sites - the smaller site lays c.1,000m directly west of the existing junction, the larger lays c.1,300m to the north-west.</p> <p>Two Scheduled monuments lay within the study area: Dagnam Park Farm moated site, Noak Hill, Romford, c.1,750m to the northwest of Junction 28; and Slight univallate hillfort 300m west of Calcott</p>	<p>swathes of relatively open commons; a sense of tranquility exists away from main road corridors.</p> <p>The M25 south of Junction 28 and the land to the southwest of Brentwood is characterised by Strongly undulating wooded farmland/ wooded hills with extensive patches of woodland, small- scale field patterns with mature tree lined field boundaries, and narrow, quiet and sinuous rural lanes connecting small-scale settlements. Noise and movement associated with the M25 and A127 road corridors is</p>	<p>Nag's Head Lane to the south of the junction, and mixed-use development areas along the A1023/ Brook Street to the east of the junction. A number of land uses typically associated with suburban areas are also present, for example Maylands Golf Course (west of the junction) and Thames Water Sewage Works (south of the junction).</p> <p>The majority of the inner perimeter of the Junction 28 roundabout is filled with the existing mature woodland, although some localised areas of scrub vegetation are evident.</p>					

Landscape Designations	Landscape Character Areas	Local Landscape Character	Landscape Sensitivity	Magnitude of Impact(s)		Significance of Effect(s)	
				Construction	Operation	Construction	Operation
<p>Hall Farm, c.2,400m to the northeast of Junction 28.</p> <p>Within the study area lays Weald Park, a Grade II Registered Park & Garden located c.800m to the north of Junction 28, and approximately sixty-two Listed Buildings, of which: 5No. are Grade II* Listed; and 57No. are Grade II Listed</p> <p>Areas of Ancient Semi-Natural Woodland, as formally defined by Natural England, are also present.</p>	<p>apparent, and a strong sense of place and orientation is provided by views towards London and North Kent across the Thames Chase Community Forest.</p>						

Table I.5: Visual receptors

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
Receptor 1					
<p>Users of Tyler’s Common off Warley Road and Nag’s Head to the south of Junction 28</p> <p>Located between c.1450-1550 m to the south of Junction 28.</p> <p>Approximately 65 m amsl.</p> <p>Characteristic existing views from this location are over the open common/ scrub land with mature tree planting in the middle distance. Utility infrastructure (Pylons) are a key feature of the skyline with distant views of residential properties in Harold’s wood.</p>	<p>Receptors are users of the public common who use the open space for the purposes of recreation and enjoyment of the countryside.</p> <p>High sensitivity to change</p>	<p>During construction, a small part of the construction activities may be discernible between retained mature tree vegetation. However, it would be at such a distance that they would likely be barely noticeable.</p> <p>The magnitude of any temporary impacts for users of the common is likely to be Negligible</p>	<p>During operation, the new slip road and associated highway infrastructure may be visible, but will be at such a distance that they would probably be barely noticeable. Only a very small part of the scheme is likely to be discernible.</p> <p>The magnitude is likely to be Negligible</p>	Slight Adverse	Slight Adverse
Receptor 2A					
<p>Users of Holiday Inn (Lower and upper storey windows to the east of the Scheme) off Brook Street (A1023) to the east of Junction 28</p> <p>Located c.100 m to the south of the A12 and c.450 m to the east of Junction 28.</p> <p>Approximately 43 m amsl.</p> <p>Characteristic existing views from this location are over deciduous tree</p>	<p>Receptors are users of Holiday Inn Hotel who stay and work in the hotel but their activities aren’t focused on enjoyment of views.</p> <p>Low sensitivity to change</p>	<p>During construction, open and direct views of plant and material movements required to facilitate realignment of the A12 and associated infrastructure works would likely be visible from the Holiday Inn. Plant and material movements would form noticeable features or elements of the view and</p>	<p>During operation, the slip roads and associated highway infrastructure, including the A12 realignment, may be visible, but are likely to be perceived as being set within, or at least being a part of the existing setting. Only a very small part of the scheme is likely to be discernible and at such a distance as to be barely noticeable.</p>	Slight Adverse	Neutral

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
vegetation, with broken gaps in planting offering direct views of the A12 and Motorway infrastructure.		<p>may be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>The magnitude of impact for these users is likely to be Negligible.</p>		
Receptor 2B					
<p>Users of Holiday Inn swimming pool and western conference rooms. Brook Street (A1023) to the east of Junction 28</p> <p>Located c.70 m to the south of the A12 and c.390 m to the east of Junction 28.</p> <p>Approximately 41 m amsl.</p> <p>Characteristic existing views from this location are of open views of the A12 and Motorway infrastructure. Sporadic tree planting offers limited screening.</p>	<p>Receptors are users of Holiday Inn Hotel who stay and work in the hotel but their activities aren't focused on enjoyment of views.</p> <p>Low sensitivity to change</p>	<p>During construction, open and direct views of plant and material movements required to facilitate realignment of the A12 and associated infrastructure works would likely be visible from the Holiday Inn. Plant and material movements would form noticeable features or elements of the view and may be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>During operation, the slip roads and associated highway infrastructure, including the A12 realignment, may be visible, but are likely to be perceived as being set within, or at least being a part of the existing setting. Only a very small part of the scheme is likely to be discernible and at such a distance as to be barely noticeable.</p> <p>The magnitude of impact for these users is likely to be Negligible.</p>	Slight Adverse	Neutral
Receptor 2C					
<p>Users of Brentwood Garden Centre. Access of Vicarage road off the (A1023) to the east of Junction 28</p>	<p>Receptors are users of Brentwood Garden Centre who use the</p>	<p>During construction, direct open views of plant and material movements required to facilitate the new road and associated</p>	<p>During operation, the slip roads and associated highway infrastructure would likely be visible, but perceived as being</p>	Adverse	Slightly Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Located c.10 m to the south of the A12 and c.270 m to the east of junction 28.</p> <p>Approximately 38 m amsl.</p> <p>Characteristic existing views from this location are directly over the A12 to the south. To the west, views in the foreground are over scrubland and motorway signage. The middle distance is Shell fuel station, MIZU restaurant and Junction 28. Utility infrastructure (Pylons) are visible in the background.</p>	<p>facility for purpose of recreation but not specifically for the view.</p> <p>Low sensitivity to change</p>	<p>infrastructure works would be likely be visible. The plant and material movements would probably form noticeable features or elements of the view which would be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>set within, or at least as being a part of, the existing setting.</p> <p>The magnitude of impact for these users is likely to be Moderate.</p>		
Receptor 2D					
<p>Users of NMU's (Non- Motorised User) along Roman Road/ A1023 road to the east of Junction 28</p> <p>Located c.130 m to the south of the A12 and c.240 m to the east of Junction 28.</p> <p>Approximately 44 m amsl.</p> <p>Characteristic existing views from this location are over single storey business development buildings (Brentwood Garden Centre) and through boundary vegetation. Views of the A12 and Junction 28 are glimpsed and limited to gaps between properties and vegetation.</p>	<p>Receptors are users of the NMU's (Non-Motorised User) / public footpath along the A1023 road.</p> <p>High sensitivity to change</p>	<p>During construction, some elements of construction activity may be discernible between existing buildings and vegetation. However, it would likely not alter the overall balance of features and elements that comprise existing views.</p> <p>The magnitude of any temporary impacts for NMU's is likely to be Negligible</p>	<p>During operation, the new slip road and associated highway infrastructure may be visible, but it is likely that these will be partially screened by buildings and existing vegetation with views barely noticeable. Only a very small part of the scheme is likely to be discernible.</p> <p>The magnitude is likely to be Negligible</p>	Neutral	Neutral

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
Receptor 2E					
<p>Residents of properties (May Cottage/ Freeman’s Cottage) along Roman Road/ A1023 road to the east of Junction 28. Properties</p> <p>Located c.120 m to the south of the A12 and c.220 m to the east of Junction 28.</p> <p>Approximately 44 m amsl.</p> <p>Characteristic existing views from this location are likely to be from the upper storey, with direct views over the A12 to the south. Looking west, views in the foreground will be over scrubland and motorway signage. The middle distance is Junction 28. Utility infrastructure (Pylons) are visible in the background.</p>	<p>Receptors are occupiers of residential properties.</p> <p>High sensitivity to change.</p>	<p>During construction, direct open views of plant and material movements required to facilitate the new road and associated infrastructure works may be visible from the upper storeys. The plant and material movements may form noticeable features or elements of the view which could be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>During operation, elements of the new road junction and associated highway infrastructure will likely be visible from the upper storeys, but probably perceived as being set within, or at least as being a part of, the existing setting. Highway infrastructure may be accentuated by the likely loss of low scattered hedge planting adjacent to the road.</p> <p>The magnitude of impact for these properties is likely to be Moderate.</p>	Moderate Adverse	Moderate Adverse
Receptor 2F					
<p>Users of MIZU restaurant along Roman Road/ A1023 road to the east of Junction 28</p> <p>Located c.80 m to the south of the A12 and c.170 m to the east of Junction 28.</p> <p>Approximately 43 m amsl.</p>	<p>Receptors are users of the restaurant. The purpose of recreation is not related to the view.</p> <p>Low sensitivity to change</p>	<p>During construction, views of plant and material movements required to facilitate the new road and associated infrastructure works would be visible over the existing brick and timber boundary. However, this boundary provides significant screening and</p>	<p>During operation, the slip and junction improvements will likely be visible, but it is likely that it will be perceived as being set within, or at least being a part of, the existing infrastructure setting and will likely be limited although permanent.</p>	Slight Adverse	Slight Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
Characteristic existing views from this location are partially screened by a brick and timber wall approximately 1.5m high. Views over the top of wall include direct views of scrubland leading to the A12 and Junction 28 to the west.		views would be likely limited. The magnitude of these temporary impacts is likely to be Moderate .	The magnitude of impact for this receptor is likely to be Moderate .		
Receptor 2G					
Users of Shell Fuel Garage along Roman Road/ A1023 road to the east of Junction 28 Located c.30 m to the south of the A12 and c.80 m to the east of Junction 28. Approximately 43 m amsl. Characteristic existing views from this location overlook low deciduous vegetation in the foreground and the A12/ junction 28 in the middle distance. Views of traffic and road infrastructure are open and direct.	Receptors are users of the Fuel Garage. The purpose of recreation is not related to the view. Low sensitivity to change	During construction, open views of plant and material movements required to facilitate the new slip road and junction would probably be easily visible. The magnitude of these temporary impacts is likely to be Moderate .	During operation, the slip and junction improvements will likely be visible, but it is likely that it will be perceived as being set within, or at least being a part of, the existing infrastructure setting and will likely be limited although permanent. The magnitude of impact for this receptor is likely to be Moderate .	Slight Adverse	Slight Adverse
Receptor 2H					
Users of Sausage-Steak- Baguettes fast food stand along Roman Road/ A1023 road to the east of Junction 28 Located c.50 m to the south of the A12 and c.120 m to the east of Junction 28.	Receptors are users of the semi-permanent fast food establishment. The purpose	During construction, open views of plant and material movements required to facilitate the new slip road and junction would probably be easily visible.	During operation, the slip and junction improvements will likely be visible, but it is likely that it will be perceived as being set within, or at least being a part of, the existing infrastructure setting and will	Slight Adverse	Slight Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Approximately 43m amsl.</p> <p>Characteristic existing views from this location overlook low deciduous vegetation in the foreground and the A12/ junction 28 in the middle distance. Views of traffic and road infrastructure are open and direct.</p>	<p>of recreation is not related to the view.</p> <p>Low sensitivity to change</p>	<p>The magnitude of these temporary impacts are likely to be Moderate.</p>	<p>likely be limited although permanent.</p> <p>The magnitude of impact for this receptor is likely to be Moderate.</p>		
Receptor 2J					
<p>Users of Vauxhall Car Garage off Brook Street (A1023) and Wigley Bush Lane to the east of Junction 28</p> <p>Located c.100 m to the south of the A12 and c.520 m to the east of Junction 28.</p> <p>Approximately 43 m amsl.</p> <p>Characteristic existing views from this location are over deciduous tree vegetation, with broken gaps in planting offering direct views of the A12 and Motorway infrastructure. The Holiday Inn screens views of Junction 28.</p>	<p>Receptors are users of the Vauxhall Car Garage who use the facility for purpose of business and not specifically for the view.</p> <p>Low sensitivity to change</p>	<p>During construction, open and direct views of plant and material movements required to facilitate the new road and associated infrastructure works would likely be visible. These plant and material movements would probably form noticeable features or elements of the view which would be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>During operation, the slip roads and associated highway infrastructure may be visible, but likely to be perceived as being set within, or at least being a part of, the existing setting.</p> <p>The magnitude of impact for these properties is likely to be Negligible.</p>	Slight Adverse	Neutral
Receptor 4					
<p>Residents of properties on Nags Head lane.</p>	<p>Receptors are occupiers of</p>	<p>During construction, some elements of construction activity may be discernible</p>	<p>During operation, some elements of the new junction may be discernible from the</p>	Neutral	Neutral

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Located c.510 m to the south of Junction 28.</p> <p>Approximately 40 m amsl.</p> <p>Characteristic existing views from this location are over the existing railway line partially screened by tree and shrub vegetation. Beyond the railway line are arable fields and scrubland. Views of the A12 and junction 28 are likely to be viewed through filtered views in existing tree vegetation.</p> <p>(Access restricted)</p>	<p>residential property.</p> <p>High sensitivity to change.</p>	<p>from the upper storeys. However, it would likely not alter the overall balance of features and elements that comprise existing views.</p> <p>The magnitude of any temporary impacts is likely to be Negligible</p>	<p>upper storeys. However, it would likely not alter the overall balance of features and elements that comprise existing views.</p> <p>The magnitude of any impacts is likely to be Negligible</p>		
Receptor 5					
<p>Residents of Boyles Court Farm on Dark Lane</p> <p>Located c.1.21 km to the south east of Junction 28.</p> <p>Approximately 81 m amsl.</p> <p>Characteristic existing views from this location are from an elevated position, with views typically through deciduous woodland, overlooking farm pasture land. In the middle distance is field boundary vegetation, filtering the</p>	<p>Receptors are occupiers of residential property</p> <p>High sensitivity to change.</p>	<p>During construction, views of plant and material movements required to facilitate the new junction and associated infrastructure works may be visible, but likely to be partially screened by intervening trees and hedgerow vegetation. Views will likely be limited and barely noticeable.</p> <p>The magnitude is likely to be Minor</p>	<p>During operation, the elements of highway infrastructure may be visible, but at such a distance that they would probably be barely noticeable. Only a very small part of the scheme is likely to be discernible.</p> <p>The magnitude of change is likely to be Negligible.</p>	Slight Adverse	Slight Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
views beyond of junction 28 and motorway infrastructure.					
Receptor 6A					
<p>Users of Bridleway, top of hill adjacent to the M25 and access from Nags head</p> <p>Located c.1.18 km to the south east of Junction 28.</p> <p>Approximately 80 m amsl.</p> <p>Characteristic existing views from this location are from an elevated position, across pasture land, typically through deciduous mature field boundary planting. Beyond perimeter planting there are residential properties on Nags Head Lane and behind these properties rail lines and motorway infrastructure are clearly identifiable. Views of the M25 and junction 28 are clear.</p>	<p>Receptors are users of a PRoW.</p> <p>High sensitivity to change.</p>	<p>During construction, views of the new junction works would likely be visible, along with cranes and operating plant. Some screening will be provided by the intervening trees and hedgerows, but construction works would still likely form noticeable features or elements of the view which would be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>During operation, the elements associated with highway infrastructure would likely be visible. Landscape mitigation measures would provide some screening, but it is likely that some sections of the new slip road and motorway signage would remain discernible. The new slip roads and associated infrastructure would probably be perceived as being set within, or at least being a part of, the existing setting.</p> <p>The magnitude is likely to be Moderate.</p>	Moderate Adverse	Moderate Adverse
Receptor 6B					
<p>Users of Bridleway, middle of hill adjacent to the M25 and access from Nags head</p> <p>Located c.910 m to the south east of Junction 28.</p>	<p>Receptors are users of a PRoW.</p> <p>High sensitivity to change.</p>	<p>During construction, views of the new junction works would likely be visible, along with crane and operating plant. Elevated equestrian perspectives would increase the likelihood of perceiving construction works. A</p>	<p>During operation, elements of highway infrastructure would likely be visible. Landscape mitigation measures in the form of planting proposals may afford screening opportunities, but it is probable that some sections of the new slip road and motorway infrastructure</p>	Moderate Adverse	Moderate Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Approximately 63 m amsl.</p> <p>Characteristic existing views from this location are across pasture land, typically through deciduous mature field boundary vegetation. Beyond are residential properties located on Nags Head Lane and behind these, existing railway line and motorway infrastructure are clearly identifiable. There are open views of the M25 J28.</p>		<p>degree of screening would be provided by the intervening trees and hedgerows, but works would still likely form noticeable features or elements of the view which would be readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts is likely to be Moderate.</p>	<p>would remain discernible, with views filtered by the intervening vegetation. Views of the new slip roads and associated infrastructure would probably be perceived as being set within, or at least being a part of, the existing setting.</p> <p>The magnitude is likely to be Moderate.</p>		
Receptor 7					
<p>Residents of Grove Farm</p> <p>Located c.10 m to the east of Junction 28.</p> <p>Approximately 39 m amsl.</p> <p>Characteristic existing views from this location are views of the M25 and associated infrastructure. Grove farm is situated directly of the entry-slip road between the A12 and the anti-clockwise carriageway of the M25 at junction 28. Views are available to the east of the Golf course, and of Alder wood to the north.</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, views of the new junction works would likely be near and direct in all directions.</p> <p>The magnitude of these temporary impacts is likely to be Major.</p>	<p>During operation, views of the new junction would likely be near and direct in all directions, with limited scope for mitigation planting to provide any significant screening effect.</p> <p>The magnitude is likely to be Major.</p>	Very Large Adverse	Very Large Adverse
Receptor 8					

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Users of Maylands golf course</p> <p>Located c.810 m to the east of Junction 28.</p> <p>Approximately 51 m amsl.</p> <p>Characteristic existing views from this location are views of fairways and driving ranges. The M25 and rail infrastructure is visible beyond deciduous woodland with utility infrastructure (Pylons) in the middle distance. In the far distance, there are views of woodland and the town of Brentwood.</p>	<p>Users of the golf course use the facility for recreational purposes and enjoyment of the countryside.</p> <p>High sensitivity to change.</p>	<p>During construction, direct and near distance views of the new junction works would be prominent.</p> <p>The magnitude is likely to be Major</p>	<p>During operation, direct and near distance views of the new junction would be dominant feature.</p> <p>Major magnitude of change</p>	Very Large Adverse	Very Large Adverse
Receptor 9A					
<p>Residents of Maylands cottages</p> <p>Located c.400 m to the east of Junction 28.</p> <p>Approximately 34 m amsl.</p> <p>Characteristic existing views are from the upper stories, over garden boundary vegetation, and across fairways and driving ranges. The M25 and rail infrastructure is likely to be visible beyond deciduous woodland blocks, with utility infrastructure (Pylons) in the middle</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, direct and near distance views of the new junction works would be prominent from the upper stories.</p> <p>The magnitude of change is likely to be Major.</p>	<p>During operation, views of the new junction works would likely dominate the view from the upper stories. Mitigation measures in the form of planting would likely afford a degree of screening, but views of sections of the new slip road and motorway infrastructure would probably remain.</p> <p>The magnitude is likely to be Major</p>	Large Adverse	Large Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
distance. Distant views of woodland and the town of Brentwood may be afforded.					
Receptor 9B					
<p>Residents of Harold's Park</p> <p>Located c.800 m to the west of Junction 28.</p> <p>Approximately 43 m amsl.</p> <p>Characteristic existing views from this location are directly over the A12. Dense vegetation looking east screen views of the M25 Junction 28. Beyond the A12 views are of dense hedge and scrubland.</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, a small part of the construction activities may be discernible from obtuse angle. However, it would be likely to be at such a distance that they would be barely noticeable.</p> <p>The magnitude of any temporary impacts for users of the common is likely to be Negligible</p>	<p>During operation, the elements associated highway infrastructure may be visible, but it is likely that with screening mitigation they would be barely noticeable. Only a very small part of the scheme is likely to be discernible.</p> <p>The magnitude of change is likely to be Negligible.</p>	Slight Adverse	Slight Adverse
Receptor 10					
<p>Residents of Oak Farm</p> <p>Located c.330 m to the west of Junction 28.</p> <p>Approximately 34 m amsl.</p> <p>Characteristic existing views from this location are over 1.8m high close-board fence with filtered views through steel rail fencing. Beyond the immediate fence views of the M25 Junction and A12 area unobstructed.</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, direct open views of plant and associated infrastructure works would be visible. The plant and material movements would likely form a noticeable features or elements of the view which are readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts are likely to be Moderate.</p>	<p>During operation, elements associated with highway infrastructure, including signage and gantries will likely be visible. Landscape mitigation measures will provide some screening, but it is still considered likely that some sections of the new junction will be discernible even if filtered through landscape vegetation.</p>	Moderate Adverse	Moderate Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
			The magnitude of change is likely to be Moderate		
Receptor 11					
<p>Residents of French's Farm off Wigley Bush Lane</p> <p>Located c.680 m to the east of Junction 28 and 190 m north of the A12.</p> <p>Approximately 50 m amsl.</p> <p>Characteristic existing views from this location are likely to be over arable fields onto native hedge rows. Directly opposite the farm is the A12, of which views maybe possible. To the west, deciduous woodland would likely screen views of the M25 and Junction 28.</p> <p>(Access restricted)</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, direct open views of plant and associated infrastructure works would be visible. The plant and material movements would likely form a noticeable features or elements of the view which are readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts are likely to be Moderate.</p>	<p>During operation, the carriageway and associated highway infrastructure will be visible, but it is likely that it will be perceived as being set within, or at least being a part of, the existing setting.</p> <p>The magnitude of impact for these users is likely to be Minor.</p>	Moderate Adverse	Moderate Adverse
Receptor 12					
<p>Residents of Spital Lane, Wingrave Crescent and Leonard Way, Brentwood.</p> <p>Located c.730 m – 1.15 km to the east of Junction 28 and 70 m south of the A12.</p> <p>Approximately 48m amsl.</p>	<p>Receptors are occupiers of residential property.</p> <p>High sensitivity to change.</p>	<p>During construction, glimpsed views from the upper storey windows of plant and associated infrastructure works would likely to be visible. The plant and material movements would likely</p>	<p>During operation, the proposals are likely to form only a small discernible element of the view from upper storey windows. Views will be glimpsed through the existing mature vegetation.</p>	Moderate Adverse	Moderate Adverse

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Characteristic existing views from this location are likely to be through dense road side vegetation, which consist of native trees and hedges. Views of the junction 28 are screened, but glimpsed views of the A12 in winter may be possible.</p> <p>(Access restricted)</p>		<p>form noticeable features or elements of the view which are readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts are likely to be Moderate.</p>	<p>The magnitude of impact is Negligible.</p>		
Receptor 13					
<p>Users of NMU's (Non- Motorised User) along Wigley Bush Lane to the east of Junction 28</p> <p>Located c.690 m to the east of Junction 28 and crossing over the A12.</p> <p>Approximately 46 m amsl.</p> <p>Characteristic existing views from this location are dominated by the A12 and associated infrastructure. To the east of the carriageway dense vegetation provides screening to receptors south of the A12. To the west of the A12 carriageway low hedgerows and leading to dense woodland planting can be identified. Views of the junction 28 can be seen in the far distance.</p>	<p>Receptors are users of the NMU (Non-Motorised User) / public footpath along the Wigley Bush Lane</p> <p>High sensitivity to change</p>	<p>During construction, direct open views of plant and material movements required to facilitate the new road and associated infrastructure works would be visible. The plant and material movements would likely form noticeable features or elements of the view which are readily apparent to the receptor.</p> <p>The magnitude of these temporary impacts are likely to be Moderate.</p>	<p>During operation, the proposed highway works on the A12 will be visible, but it is likely that it will be perceived as being set within, or at least being a part of, the existing setting.</p> <p>The magnitude of impact for these users is likely to be Moderate.</p>	<p>Moderate Adverse</p>	<p>Moderate Adverse</p>
Receptor 14					

Potential Visual Amenity Receptor and baseline	Sensitivity	Magnitude of Impact		Significance of Effect	
		Construction	Operation	Construction	Operation
<p>Users of the A12 dual carriageway to the west of Junction 28</p> <p>Located directly west of Junction 28</p> <p>Approximately 34 m amsl.</p> <p>Characteristic existing views from the west of junction 28 are of the M25 junction 28 (to the northeast) and of the A12 (to the southwest). Existing tree and hedge vegetation adjacent to the carriageway does provide some screening in summer.</p>	<p>Receptors are users of / passengers on public transport utilising the A12 west of Junction 28.</p> <p>Low sensitivity to change</p>	<p>During construction, views of plant and associated traffic management works would likely be a dominant feature and be highly visible from this receptor.</p> <p>The magnitude of these temporary impacts are likely to be Major</p>	<p>During operation, the new junction and associated highway infrastructure will be visible. It is likely that it will form a noticeable feature of the view and be readily apparent to users of the A12.</p> <p>The magnitude of impact is Moderate</p>	Slight Adverse	Slight Adverse

Appendix J. Geology and Soils

J.1 Planning and policy context

National policy

National Policy Statement for National Networks (NN NPS)

- J.1.1 Para. 5.117 and 5.118 of the NN NPS (Department for Transport, 2014) states if land stability could be an issue with regards to a proposed development, an assessment (i.e. land stability or slope stability risk assessment) should be carried out at the earliest possible stage to consider the likely consequences where subsidence, landslides, ground compression and other geological hazards are known or suspected. Applicants should ensure that their sites are and will remain stable or can be made so as part of a development.
- J.1.2 Para. 5.176 advises that the economic and other benefits of BMV land should be considered. Little weight will be attached to the loss of agricultural land in grades 3b, 4 and 5 (except in areas (such as uplands) where agricultural practices may themselves contribute to the quality and character of the environment or the local economy).
- J.1.3 Water quality guidance and policy are set out in paragraphs 5.219 to 5.231. The objective is that new and existing development should be prevented from contributing to, or being put at unacceptable risk from, or being adversely affected by, water pollution. Key requirements are that the existing status of water quality, water resources and physical characteristics in the water environment must be ascertained and that the impacts of the proposed project, including those associated with any cumulative effects, are assessed.

National Planning Policy Framework (NPPF)

- J.1.4 The NPPF (Ministry of Housing, Communities and Local Government, 2018) states:
- A site should be suitable for its proposed use taking account of ground conditions and any risks arising from land instability and contamination (para. 178);
 - Proposals should include mitigation methods for land remediation (as well as potential impacts on the natural environment arising from that remediation);
 - After remediation, as a minimum, land should not be capable of being determined as contaminated land under Part IIA of the Environmental Protection Act 1990 (EPA);
 - Adequate site investigation information, prepared by a competent person, is available to inform these assessments;
 - Where a site is affected by contamination or land stability, the responsibility for ensuring a safe development rests with the developer and/or land owner (para. 179); and

- Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality (para. 171).

Environmental Protection Act 1990

J.1.5 Part 2A of the EPA (UK Government, 1990) introduced a statutory regime for the identification and remediation of 'Contaminated Land'. It introduced, for the first time in the UK, a statutory definition of 'Contaminated Land' based on significant harm or the likelihood of significant harm or the pollution or likely pollution of controlled waters (all groundwater, inland waters and estuaries, excluding water perched above the zone of saturation).

J.1.6 Local authorities are the primary regulators under the Part 2A regime, with a duty to identify whether the land in their area is 'Contaminated Land', although provision is made for consultation and co-ordination with the Environment Agency in situations when pollution of controlled waters is an issue.

Environment Agency Report R&D66

J.1.7 Report R&D66 (NHBC & Environment Agency, 2008) provides guidance on the development and application of the consequence and probability matrix and guidance on conducting a risk assessment. R&D66 sets out land quality estimation of the Level of Risk by Comparison of Consequence and Probability.

Contaminated Land Statutory Guidance

J.1.8 The Contaminated Land Statutory Guidance (Defra, 2012) document provides the principal objectives of Part 2A, which are to:

- Identify and remove unacceptable risks to human health and the environment;
- Seek to ensure that contaminated land is made suitable for its current use; and
- Ensure that the burdens faced by individuals, companies and society as a whole are proportionate, manageable and compatible with the principles of sustainable development.

J.1.9 These three objectives underlie the 'suitable for use' approach to the assessment and remediation of 'land contamination'. This approach recognises that the risks presented by any given level of land contamination will vary greatly according to the use of the land and a wide range of other factors, such as the sensitivity of the underlying geology and the receptors which may be affected. The 'suitable for use' approach consists of three elements:

- Ensuring that land is suitable for its current use;
- Ensuring that land is made suitable for any new use; and
- Limiting requirements for remediation to the work necessary to prevent unacceptable risks to human health or the environment in relation to the current use or future use of the land.

J.1.10 Contaminated Land Report 11 (CLR11) and Guiding Principles for Land Contamination (GPLC)

J.1.11 Primary guidance for assessing and managing land contamination is presented in CLR11 (Environment Agency & Defra, 2004) and the Guiding Principles for Land Contamination (GPLC) (Environment Agency, 2010). These documents provide a technical framework for the identification and remediation of contamination through the application of a risk management process.

The Water Resources Act 1991 (as amended) (WRA)

J.1.12 The WRA (UK Government, 1991) sets controls of pollution of water sources in Section III. It contains information about water quality objectives, powers to prevent and control pollution and pollution offences.

Environment Agency's approach to groundwater protection

J.1.13 The Environment Agency's approach to groundwater protection (Environment Agency, 2018) contains position statements on SPZs areas identified as drinking water protected areas and aquifer designations. It states that:

- The development of infrastructure should be directed to less sensitive groundwater locations;
- The Environment Agency will use a risk based tiered approach to regulate activities that may impact groundwater resources; and
- The Environment Agency expects developers and operators to take into account all current and future groundwater uses and their dependent ecosystems.

Water Framework Directive (WFD)

J.1.14 The purpose of the WFD (European Commission, 2000) is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater. It requires that:

- Environmental objectives should be set to ensure that good status of groundwater is achieved and that its deterioration is avoided. This includes that any upward sustaining trend in the concentration of a pollutant must be identified and reversed;
- A good status of groundwater requires early action and stable long-term planning of protective measures, owing to the natural time lag in its formation and renewal; and
- Monitoring programmes should cover monitoring of the chemical and quantitative status of groundwater.

Thames River Basin Management Plan (RBMP)

J.1.15 The Thames RBMP (Defra, 2016) is designed to protect and improve the quality of the water environment. The Thames RBMP includes consideration of the following topics:

- Plans for the protection and improvement of the water environment;
- Future plans that may affect the infrastructure sector and its obligations;

- Development proposal considerations regarding the requirements of the RBMP; and
- Environmental permit applications.

Regional and local policy

The London Plan (2016)

- J.1.16 Policy 5.21 of the London Plan (Greater London Authority, 2016) requires appropriate measures should be taken to ensure that development on previously contaminated land does not activate or spread contamination. The plan does not cover agricultural land or BMV.

London Borough of Havering Core Strategy

- J.1.17 Policy CP15 (Environmental Management) of the Core Strategy and Development Control Policies Development Plan Document (London Borough of Havering, 2008) states that in order for new developments to reduce their environmental impact, construction and use, planners must take the necessary measures to address contaminated land issues.
- J.1.18 DC47 (Agriculture) states the Council will not grant planning permission where the proposal would result in the loss of high quality agricultural land (Grades 1, 2 & 3a) unless it can be shown that there is an overriding sustainability benefit, or the development is unavoidable and no lesser quality land is available.

London Borough of Havering Local Plan (Proposed Submission Version)

- J.1.19 Policy 34 (managing pollution) of the Local Plan (London Borough of Havering, n.d) states the Council will support development proposals that do not unduly impact upon amenity, human health and safety and the natural environment as a result of land contamination.
- J.1.20 BMV land is only offered protection under Policy 38 (Mineral Extraction).

Brentwood Replacement Local Plan

- J.1.21 Policy PC1 (Land Contaminated by Hazardous Substances) of the Local Plan (Brentwood Borough Council, 2008), outlines the requirement for an Environmental Survey to be carried out in order to assess the 'nature and extent of the contamination' of land where it is suspected of being contaminated by hazardous substances 'arising out of previous land uses such as industry, gas works, waste tips or landfill sites'.
- J.1.22 The plan aims to protect BMV land stating that where there is a choice between sites of a different classification, development should be directed towards land of the lowest possible classification, unless sustainability or other material issues suggest otherwise.

Brentwood Draft Local Plan

- J.1.23 In accordance with Policy 10.15 (Contaminated Land and Hazardous Substances) of the Draft Local Plan (Brentwood Borough Council, 2016) the Council will require applicants proposing development on or near known or potentially contaminated land to submit a detailed site characterisation and tiered

risk assessment and to identify any remedial measures that need to be carried out within a detailed Remediation Scheme.

J.1.24 Paragraphs 10.78 to 10.85, include requirements for development on, or near to land which is suspected to be contaminated, including:

- There will be no threat to the health of future users or occupiers of the site or neighbouring land;
- There will be no adverse impact on the environment and quality of local groundwater or surface water quality; and
- There would be no unacceptable adverse impacts on property.

J.1.25 The plan does not include agricultural land or BMV soils.

Table J.1: Classification of probability

Classification	Definition of the Probability of Harm/Pollution Occurring
High Likelihood	The contaminant linkage exists and it is very likely to be realised in the short term, and/or will almost inevitably be realised in the long term, and/or there is current evidence of it being realised.
Likely	The source, pathway and receptor exist for the contaminant linkage and it is probable that this linkage will be realised. Circumstances are such that realisation of the linkage is not inevitable, but possible in the short term and likely over the long term.
Low Likelihood	The source, pathway and receptor exist and it is possible that it could be realised. Circumstances are such that realisation of the linkage is by no means certain in the long term and less likely in the short term.
Unlikely	The source, pathway and receptor exist for the contaminant linkage but it is improbable that it will be realised even in the long term.

Table J.2: Classification of consequence

Classification	Definition of Consequence
Human Health Receptors - Site End Users	
Severe	Acute damage to human health based on the potential effects on the critical human health receptor.
Medium	Chronic damage to human health based on the potential effects on the critical human health receptor.
Mild	Minimal short- term effects on human health based on the potential effects on the critical human health receptor.
MInor	No appreciable impact on human health based on the potential effects on the critical human health receptor.
Controlled Water Receptors	
Severe	Pollution of a principal aquifer within a source protection zone (inner and outer) or potable supply characterised by a breach of drinking water standards. Pollution of a surface water course characterised by a breach of an EQS at a statutory monitoring location or resulting in a change in GQA

Classification	Definition of Consequence
	grade of river reach. Discharge of a List I or List II substance to groundwater.
Medium	Pollution of a principal aquifer outside a source protection zone (inner and outer) or a secondary A aquifer characterised by a breach of drinking water standards. Pollution of an industrial groundwater abstraction or irrigation supply that impairs its function. Substantial pollution but insufficient to result in a change in the GQA grade of river reach.
Mild	Low levels of pollution of a principal aquifer outside a source protection zone or an industrial abstraction, or pollution of a secondary A or B aquifer. Low levels of pollution insufficient to result in a change in the GQA grade of river reach, pollution of a surface water course without a quality classification.
Minor	No appreciable pollution, or pollution of a low sensitivity receptor such as a secondary (undifferentiated) aquifer or a surface water course without a quality classification.
Ecosystem Receptors	
Severe	For sites with designations as follows - Site of Special Scientific Interest, National Nature Reserve, Special Protection Area (and potential sites), Special Area of Conservation (and candidate sites) or Ramsar. Irreversible adverse change in the functioning of the ecological system or any species of special interest that forms part of that system.
Medium	For sites with designations as follows - Site of Special Scientific Interest, National Nature Reserve, Special Protection Area (and potential sites), Special Area of Conservation (and candidate sites) or Ramsar. Substantial adverse change in the functioning of the ecological system or any species of special interest that forms part of that system.
Mild	Harm to ecosystems of a low sensitivity such as sites of local importance. No appreciable harm to ecosystems with statutory designations.
Minor	Limited harm to ecosystems of low sensitivity such as sites of local importance.
Property Receptors - Buildings, Foundations and Services including the Scheme	
Severe	Collapse of a building or structure including the services infrastructure from explosion.
Medium	Significant damage to a building or structure including the services infrastructure impairing their function.
Mild	Damage to buildings/structures and foundations but not resulting in them being unsafe for occupation. Damage to services but not sufficient to impair their function.
Minor	No appreciable damage to buildings/structures, foundations and services.
Property Receptors - Grade 1 Agricultural land	
Severe	Substantial loss in the value of crops or domestically-grown produce resulting from disease, death or other physical damage. Death to

Classification	Definition of Consequence
	livestock, domesticated animals or wild animals subject to shooting or fishing rights.
Medium	Substantial diminution in yield of crops or domestically-grown produce resulting from disease, death or other physical damage. Serious disease or other serious physical damage to livestock, domesticated animals or wild animals subject to shooting or fishing rights.
Minor	Harm to crops but not resulting in a substantial loss in value or diminution in yield. Limited harm in terms of disease or other physical damage to livestock, domesticated animals or wild animals subject to shooting or fishing rights.
Negligible	No appreciable harm, or harm to a low sensitivity receptor.

Table J.3: Site history

Date	Development at the site and surrounding area
1868	An unnamed road is mapped, which follows a similar alignment to the current day 'Colchester Road A12' to the southwest of Junction 28, and 'Brook Street A1023' to the northeast. The Scheme and surrounding land is situated amongst open fields except for the area to the north of the Scheme which is occupied by Alder Wood and Lower Vicarage Wood. Brook Street is a small village approximately 1km to the north-east of the location currently occupied by Junction 28 of the M25. Development within the village includes residential properties, a farm, a public inn and a hospital. The railway line is mapped in its current configuration and is identified as the Great Eastern Railway.
1872	Weald Brook is mapped in its current alignment, joining Ingrebourne River where the watercourse passes under the current A12. Mapping identifies that Putwell Bridge supports the road over the river. Three ponds are situated within 250m of the centre of Junction 28; two located approximately 200m to the north-west in open fields (one situated within the current extents of the M25 main carriageway) and one located approximately 100m south-east of Putwell Bridge. Putwell Farm is situated immediately south of Junction 28 in its current location. The Poplars is situated immediately south-east of the junction and the Grove (woodland) is situated immediately to the north-west. A windmill is located 100m to the north-east of the Poplars.
1896	No significant change.
1898	Brentwood Sewage Works is located approximately 840m to the south-west from the centre of the current location of Junction 28.
1920	The unnamed road (currently Colchester Road A12 and Brook Street A1023) is mapped as a Roman Road. Old filter beds are located approximately 750m to the south of the centre of Junction 28; alongside Nag's Head Lane and close to Brentwood sewage works (now mapped as 'Sewage Works (Billericay & Brentwood Joint Sewage Committee)'). The sewage works development has increased in size and now comprises at least 6 tanks; mapping is not available immediately to the west of the sewage works. Another sewage works is mapped as 'Sewage Works (Billericay R.D.C)' 500m to the south-west of the centre of Junction 28, and with it some new filter beds. The aforementioned windmill is no longer shown on the maps.
1938	The railway line is identified as the London and North Eastern Railway. Minor residential development of Harold Park is evident (approximately 1km south-west of Junction 28). Mapping is available for the area immediately to the west of Sewage Works (Billericay & Brentwood Joint Sewage Committee), where additional filter beds are mapped.

Date	Development at the site and surrounding area
1947	Aerial photography indicates that Sewage Works (Billericay & Brentwood Joint Sewage Committee) now comprises at least 10 tanks.
1961	The Roman Road is identified as Brook Street north of Junction 28 location and as Colchester Road to the south. Significant residential development has occurred, namely in and around Brook Street and Harold Park and alongside Nag's Head Lane. A coal yard and garage now operate in the village of Brook Street. Pylons and overhead cables are mapped in their current configuration, running approximately north-south and located 320m to the west of Junction 28 at their closest point. An unnamed forecourt and buildings are mapped immediately to the west of Putwell Bridge, approximately 400m to the south-west of the centre of Junction 28. The 'Sewage Works (Billericay R.D.C)' is no longer mapped.
1968	A roundabout has been constructed at the current location of Junction 28; significant earthwork construction has been undertaken to develop what appears to be an elevated roundabout. The Brook Street/Colchester Road follows the current day alignment. The road has seen structural changes and is raised on embankment. An electricity substation is located immediately east of Junction 28, and a garage is mapped to the north of Brook Street 225m to the east of the centre of Junction 28.
1973	No significant change.
1978	A hotel has been constructed on the northern side of Brook Street; an electricity substation is situated within its grounds. This is 470m to the east of the centre of the junction.
1984	The M25 has been constructed in its current configuration and embankment extends some 60m either side of the road. The two ponds situated approximately 200m north-west of Junction 28 are no longer mapped (the M25 main carriageway has been built over one of them. The other is located within the vicinity of the recycling centre adjacent to Grove Farm, where a historic landfill site is indicated to be present that ceased receiving waste in 1983 (Environment Agency, 2017)). A reservoir is present approximately 800m to the south-east of the current location of the centre of Junction 28. The forecourt and buildings adjacent to Putwell Bridge are labelled as a 'filling station'.
1986	A filling station is shown immediately west of Putwell Bridge and on the southern side of Colchester Road.
1992	The garage north of Brook Street is 225m to the east of Junction 28 is no longer mapped. A filling station is mapped adjacent to this and in the location of the current Shell South Weald fuel station immediately to the east of Junction 28.
1999	A building is shown approximately 1.1km to the southwest of the centre of Junction 28, which appears to have the same outline as the Esso petrol station currently at its location.
2006	No significant change.
2016	The filling station adjacent to Putwell Bridge is no longer mapped.

Appendix K. Cultural Heritage

K.1 Planning and policy context

Legislation and Guidance

K.1.1 This assessment has been prepared with reference to the following legislation:

- Ancient Monuments and Archaeological Areas Act (1979); and
- Planning (Listed Building and Conservation Areas) Act (1990).

K.1.2 In addition, the chapter has considered the following guidance:

- Standards and guidance for historic environment desk-based assessment: Chartered Institute for Archaeologists (CIfA, 2014);
- The Setting of Heritage Assets Historic Environment Good Practice Advice in Planning Note 3 (Historic England, 2015); and
- Design Manual for Roads and Bridges (DMRB) Volume 11 (Highways Agency, 2007).

National policy

National Policy Statement for National Networks (NN NPS)

K.1.3 Historic Environment Policy is set out in paragraphs 5.120 to 5.142 of the NPSNN. The key aspects which should be addressed are as follows:

- The significance, setting and viability of the heritage assets likely to be affected by the proposed development should be considered.
- When considering the impact of a proposed development on the significance of a designated heritage asset great weight should be given to the asset's conservation. The more important the asset, the greater the weight should be.
- Harm or loss affecting any designated heritage asset should require clear and convincing justification - substantial harm to or loss of a grade II Listed building or grade II Registered Park or Garden should be exceptional; substantial harm to or loss of designated assets of the highest significance should be wholly exceptional.

K.1.4 There is no definition of what constitutes 'substantial harm' in the NN NPS or other published policy documents. However, guidance in National Planning Policy Guidance (NPPG), supporting policy advice and case law indicates that whilst clearly a step down from total loss, substantial harm still represents a considerable degree of change to the significance of an asset. This could, for example, be as the result of removal of significant elements of fabric or the degradation / removal of key aspects of an asset's setting that notably contribute to its significance.

- K.1.5 When considering the consequences of substantial harm there is a strong presumption against development.
- K.1.6 NN NPS embodies an underlying principle of balancing harm and benefit which places greater weight on the conservation of more important assets. Where less than substantial harm would occur, there is a need to ensure that harm is justified and minimised and that the wider public benefits of the proposed are appropriately articulated.
- K.1.7 Para 5.129 of the NPS requires the Secretary of State to take into account the significance of the asset and Para. 5.132 of the NPS outlines that any harm should be weighed against the public benefit.
- K.1.8 Paragraph 5.131 of the NN NPS outlines that when considering a development, the more important the asset, the greater the weight that should be attached to it. In the case of Grade II listed buildings and Registered Parks and Gardens, it is expected that any substantial harm or loss to them or their settings should be exceptional and would be subject to a clear and convincing justification. Harm would be weighed against the public benefits of the proposal.
- K.1.9 Paragraph 5.134 goes on to state that a balance between potential harm to a designated heritage asset and the potential public benefits should be recognised, particularly where the ‘harm’ is seen to be ‘less than substantial’.
- K.1.10 In National Parks, the Broads and Areas of Outstanding Natural Beauty development consent would be refused except in exceptional circumstances and a public interest case can be demonstrated.

National Planning Policy Framework

- K.1.11 The National Planning Policy Framework (NPPF) (DCLG 2018) sets out 12 Core Planning Principles of which the conservation of historic environment is one. One of the NPPF’s core principles is that “*planning should conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations*” (DCLG, 2018, Para 185).
- K.1.12 The DCLG published Planning Practice Guidance (PPG) online in 2014, to expand upon the NPPF. Section ‘18a: Conserving and Enhancing the Historic Environment’ was published in April 2014. The Guidance notes that “*conservation is an active process of maintenance and managing change. It requires a flexible and thoughtful approach to get the best out of assets as diverse as listed buildings to as yet undiscovered, undesignated buried remains of archaeological interest*”.
- K.1.13 The NPPF and the PPG identifies two categories of non-designated sites of archaeological interest:
- “Those that are demonstrably of equivalent significance to scheduled monuments and are therefore considered subject to the same policies as those for designated heritage assets” (PPG citing National Planning Policy ‘Framework Paragraph 139); and
 - “Other non-designated heritage assets of archaeological interest. By comparison this is a much larger category of lesser heritage significance, although still subject to the conservation objective. On occasion, the

understanding of a site may change following assessment and evaluation prior to a planning decision and move it from this category to the first” (PPG).

- K.1.14 Paragraph 189 of the NPPF requires applicants to describe the significance of any heritage assets affected, with the level of detail being ‘proportionate to the assets’ importance and no more than is sufficient to understand the potential impact of the proposal on their significance’. The paragraph goes on to state that if the site includes heritage assets with archaeological interest, ‘local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation’.
- K.1.15 Paragraph 193 concurs with the aforementioned policies, whereby ‘great weight should be given to the asset’s conservation. The more important the asset, the greater the weight should be’. Furthermore, ‘any harm or loss should require clear and convincing justification. Substantial harm to or loss of designated heritage assets of the highest significance, notably scheduled monuments, protected wreck sites, battlefields, Grade I and II listed buildings, Grade I and II registered parks and gardens, and World Heritage Sites, should be wholly exceptional’. Para. 133 outlines that there could be a case where substantial harm is outweighed by substantial public benefit.
- K.1.16 Building on the NPPF, planning practice guidance published in April 2014 provides more detail planning guidance on conserving and enhancing the historic environment.

Regional policy

The London Plan

- K.1.17 Policy 7.8 (Heritage assets and archaeology) refers to London’s heritage assets and historic environment, including listed buildings, registered historic parks and gardens and other natural and historic landscapes, conservation areas, World Heritage Sites, registered battlefields, scheduled monuments, archaeological remains and memorials should be identified, so that the desirability of sustaining and enhancing their significance and of utilising their positive role in place shaping can be taken into account.
- K.1.18 Any development affecting heritage assets should:
- Incorporate measures that identify, record, interpret, protect and, where appropriate, present the site’s archaeology as well as conserve their significance by being sympathetic to their form, scale, materials and architectural details;
 - Identify, value, conserve, restore, re-use and incorporate heritage assets, where appropriate; and
 - Conserve their significance, by being sympathetic to their form, scale, materials and architectural detail.
- K.1.19 New development should make provision for the protection of archaeological resources, landscapes and significant memorials. The physical assets should, where possible, be made available to the public on-site. Where the archaeological asset or memorial cannot be preserved or managed on-site, provision must be made for the investigation, understanding, recording, dissemination and archiving of that asset.

- K.1.20 Paragraph 7.31 requires development to acknowledge the ‘significant contribution’ which heritage assets such as conservation areas make to local character, and should be protected from ‘inappropriate development that is not sympathetic in terms of scale, materials, details and form’. Furthermore, the Plan states that development ‘that affects the setting of heritage assets should be of the highest quality of architecture and design’. Paragraph 7.31A continues, stating that where ‘a development proposal will lead to less than substantial harm to the significance of a designated asset, this harm should be weighed against the public benefits of the proposal’.

Local policy

London Borough of Havering Core Strategy 2008

- K.1.21 Policy DC67 which concerns buildings of heritage interest, states that permission will only be granted whereby the development does not involve either the demolition of a listed building or it adversely affects a listed building.
- K.1.22 Policy DC70 concerns Archaeology and Ancient Monuments. The Council will ensure that the archaeological significance of sites is taken into account when making planning decisions and will take appropriate measures to safeguard that interest. Planning permission will only be granted where satisfactory provision is made in appropriate cases for preservation and recording of archaeological remains in situ or through excavation. Where nationally important archaeological remains exist there will be a presumption in favour of their physical preservation. Particular care will need to be taken when dealing with applications in archaeological ‘hotspots’ where there is a greater likelihood of finding remains.
- K.1.23 Policy DC71 concurs in regard to land, with the character of historic parks and common land being protected and enhanced, with particular consideration to the protection of views.
- K.1.24 Policy CP18 outlines the need for ‘all new development affecting sites, buildings, townscapes and landscapes of special architectural, historical or archaeological importance’ to ‘preserve or enhance their character or appearance’.

London Borough of Havering Supplementary Planning Document

- K.1.25 The London Borough of Havering adopted a Heritage Supplementary Planning Document in 2011. This provides relevant guidance to scheme promoters to ensure appropriate identification, protection, enhancement and management of Havering’s heritage assets.

Brentwood Replacement Local Plan (2005)

- K.1.26 In terms of heritage, the Replacement Local Plan (paragraph 9.49) outlines the requirement to conserve and protect the historic environment in order for future generations to benefit from the ‘maintenance of these elements from our past’. Furthermore, paragraph 9.50 states that ‘new development and transport proposals can have a significant impact on the historic environment and need to be controlled to avoid or minimise any detrimental impacts’.
- K.1.27 Policy C8 referring to ancient landscapes and special landscape areas outlines the need for a landscape character assessment to be prepared for the Brentwood Borough Council administrative area. This assessment identifies the

‘particular character of different localities within the countryside’. Policy C9 ancient landscapes and historic parks and gardens regard states that the Council will ‘seek to conserve, enhance and manage ancient landscapes and designated parks and gardens of special historic interest’. ‘Development which would damage the character or appearance of an ancient landscape, or of a park or garden of special historic interest or its setting will not be permitted’.

- K.1.28 Policy C14 refers to the development affecting conservation areas, which outlines the need to preserve or enhance their character or appearance of these areas. Specifically, the policy states that proposals will be permitted whereby:
- The townscape character of the area is preserved or enhanced;
 - The materials to be used are sympathetic to the surrounding buildings and appropriate to the area;
 - The mass of the building is in scale and harmony with the adjoining buildings and the area as a whole;
 - The design of the building is such that the proportions of the parts relate satisfactorily to each other and to adjoining buildings;
 - The proposal does not affect any buildings, open spaces, trees, views or other aspects which contribute to the special character of the area;
 - Where demolition is proposed, the structure to be demolished makes no material contribution to the character or appearance of the area, and there are satisfactory proposals for the re-use of the site including any replacement building or other structure;
 - Where a change of use is proposed, the new use will not require any changes in the appearance or setting of the building other than those which will preserve;
 - Enhance its contribution towards the character or appearance of the area; and
 - Where an alteration is proposed, it is appropriate and sympathetic in design, scale, materials and colour to the rest of the building.
- K.1.29 Policy C16 reaffirms the need to conserve character and setting, in the context of a development being located in the ‘vicinity of a listed building’. Proposals will not be permitted whereby the proposals would be ‘likely to detract from its character or setting’.
- K.1.30 Policy C18 outlines the stance that where ‘important archaeological sites and monuments’ and their setting are affected by a proposed development, there will be a ‘presumption in favour of their preservation in situ’. Archaeological field assessments will need to be carried out before an application can be determined in situations where there are grounds for believing that the proposed development would affect ‘important archaeological sites and monuments’.
- K.1.31 Brentwood Draft Local Plan (January, 2016)
- K.1.32 Policy 5.1, relating to spatial strategy, outlines the requirement for local character to be protected and enhanced, as well as for potential impact on heritage assets to be minimised.
- K.1.33 General development policy 6.3, in terms of heritage, refers to the need to consider the ‘impact of development on the significance of a designated heritage

asset'. Therefore, 'greater weight should be given to the asset's conservation and enhancement'.

- K.1.34 Policy 9.1 confirms the Council's commitment to preserve the borough's heritage assets. Proposals should have regard for 'protecting, conserving and, where appropriate, enhancing heritage assets', as well as the 'potential impact of development on non-designated heritage assets including archaeology'.
- K.1.35 Policy 9.5, relating to listed buildings, states that development in the vicinity of a listed building will only be permitted where the development is 'sympathetic to its character and setting'.
- K.1.36 In terms of Conservation Areas, Policy 9.6 states that development will only be permitted where it is proportional in design to the wider area. Similarly, where an alteration is proposed, it should be 'appropriate and sympathetic in design, scale, materials and colour' to the existing design of the setting. Any proposal should also include a historic and architectural evaluation within the Design and Access Statement.
- K.1.37 Policy 9.7 states that planning permission will not be given for development which would adversely affect a Scheduled Monument, or other locally or nationally important sites and monuments, or their setting. For development affecting areas of known or suspected archaeological importance, provision should be made for the preservation of important archaeological remains. The policy expresses a preference for preservation in situ unless it can be shown that archaeological mitigation through recording, assessment, analysis report and deposition of archive is more appropriate.
- K.1.38 Policy 10.6, relating to high quality design principles, states that new development will be expected to 'complement and enhance the character of its context through sensitive siting, layout and high quality design'. Furthermore, proposals should 'conserve, sustain and enhance designated and non-designated 'heritage assets' (as defined in the national policy and guidance) including buildings, features, archaeology, conservation areas and their settings'. Where archaeological potential is identified, this 'should include an appropriate desk based assessment and, where necessary, a field evaluation'.

K.2 Gazetteer

Table K.1: Gazetteer of heritage assets

Reference	Site Name	Designation	Period	Value
1197231	The Golden Fleece Inn	Grade II* Listed Building	Medieval	High
1279743	Moat House	Grade II* Listed Building	Post Medieval	High
1297259	The Bull Inn	Grade II Listed Building	Medieval	Medium
1197190	Nag's Head Inn	Grade II Listed Building	Post Medieval	Medium
1183938	Timber framed range of weather boarded outbuildings to Tylers Hall Farmhouse.	Grade II Listed Building	Post Medieval	Medium

Reference	Site Name	Designation	Period	Value
1297215	Stony Hills Farm	Grade II Listed Building	Post Medieval	Medium
1205707	17, 19 and 21, Brook Street	Grade II Listed Building	Post Medieval	Medium
1079905	Tylers Hall Farmhouse	Grade II Listed Building	Post Medieval	Medium
1000747	Weald Park	Grade II Registered Park and Garden	Medieval	Medium
DEX22829	Weald Park	Conservation Area	N/A	Medium
DEX22821	South Weald	Conservation Area	N/A	Medium
DLO33196	Alluvium Deposits	Archaeological Priority Area	N/A	Medium
DLO33198	Gravel Sands Deposits (Geology)	Archaeological Priority Area	N/A	Medium
DLO33238	Roman Road: London to Colchester	Archaeological Priority Area	Roman	Medium
DLO33197	Gravel Head Deposits (Geology)	Archaeological Priority Area	N/A	Medium
MLO100582	Little Tomkyns Farm (east of) {Cropmark}	N/A	Lower Palaeolithic to Post Medieval	Low
MLO100583	Folkes Lane (west of) {Cropmark}	N/A	Lower Palaeolithic to Post Medieval	Low
MLO76051	Hole Farm	N/A	Prehistoric	Low
MLO106812	Possible Roman road running from London to Chelmsford. {Line of Roman Road}	N/A	Roman	Low
MLO23390	Tylers Common Upminster	N/A	Roman	Low
MLO76898	Hole Farm	N/A	Roman	Low
MEX2262	Roman Road	N/A	Romano-British	Low
MEX2346	Brentwood-Hillside Walk	N/A	Romano-British	Low
MEX1032843	Great Warley Historic Settlement	N/A	Early Medieval to Medieval	Low
MLO12476	Tylers Common Upminster	N/A	Early Medieval/Dark Age to Medieval	Low
MEX2254	Near Shenfield Road	N/A	Medieval	Low
MEX2256	Moat House	N/A	Medieval	Low
MEX40795	Brentwood - The Golden Fleece	N/A	Medieval	Low

Reference	Site Name	Designation	Period	Value
MLO10414	Warley Road, Cranham (Formerly)	N/A	Medieval	Negligible
MLO54549	Beredens La Cranham Manor House	N/A	Medieval	Low
MLO9677	Beredens La Cranham House	N/A	Medieval	Low
MLO104564	Nags Head Lane/Warley Road [Tylers Common] Havering, RM14 {Common land}	N/A	Medieval to Modern	Low
MEX1032780	South Weald Historic Settlement	N/A	Medieval to Post Medieval	Low
MEX1032782	Vicarage, South Weald	N/A	Medieval to Post Medieval	Low
MLO14553	Settle Road Romford	N/A	Medieval to Post Medieval	Low
MLO15564	Greenway Harold Pk Romford	N/A	Medieval to Post Medieval	Low
MLO23628	Beredens La Cranham	N/A	Medieval to Post Medieval	Low
MLO53802	Beredens La Cranham	N/A	Medieval to Post Medieval	Low
MEX1002842	Brownes Charity Almshouses and Chapel	N/A	Post Medieval	Low
MEX1031657	Coombe Lodge	N/A	Post Medieval	Low
MEX1036565	Findspot on the Epping-Horndon Gas Pipeline	N/A	Post Medieval	Low
MEX1036739	Wormwalk Shaw, Boyles Court, Brentwood	N/A	Post Medieval	Low
MEX1049358	Post Medieval ditches excavated during M25 Widening	N/A	Post Medieval	Low
MEX1049359	Post Medieval ditches excavated during M25 Widening	N/A	Post Medieval	Low
MEX2261	Moat House	N/A	Post Medieval	Low
MEX27432	Warley Place	N/A	Post Medieval	Low
MEX40800	Brentwood - London Road, Victorian Silt Trap. (BW3)	N/A	Post Medieval	Low
MLO105289	Dagnam Park [Wanstead Park] Romford Havering RM3 {Architectural Fragments In Dagnam Park}	N/A	Post Medieval	Low
MLO24496	Tylers Common Upminster, Spring	N/A	Post Medieval	Low
MLO37676	Beredens La Cranham	N/A	Post Medieval	Low
MLO104464	Dagnam Park Drive/Settle Road, [Dagnam Park] Harold Hill, Havering {Public Park}	N/A	Post Medieval to Modern	Low

Reference	Site Name	Designation	Period	Value
MEX1035292	Boundary Post, Nags Head Lane, Brentwood, opposite entrance to Sewage Works	N/A	Modern	Low
MEX1035529	Alan-Williams Turret (Destroyed), Brook House, Brook Street	N/A	Modern	Low
MEX1035530	Spigot Mortar Emplacement (Destroyed), Brook St.	N/A	Modern	Negligible
MEX1035531	Road Barrier (Destroyed), "The Golden Fleece," Brook Street	N/A	Modern	Negligible
MEX1036731	Bermuda or Island Wood, Boyles Court, Brentwood	N/A	Modern	Low
MEX1036732	Bridge Wood, Boyles Court, Brentwood	N/A	Modern	Negligible
MEX1036738	Pipeline Wood, Boyles Court, Brentwood	N/A	Modern	Negligible
MEX27426	Warley Place	N/A	Modern	Low
MEX1036570	Fieldwalking Along the Epping-Horndon Gas Pipeline. A number of findspots of pottery and flint were recorded along the gas pipeline route.	N/A	Unknown	Low
MEX1036733	Hole Wood, Boyles Court, Brentwood	N/A	Unknown	Low
MEX1036734	Jacksons Wood, Boyles Court, Brentwood	N/A	Unknown	Low
MEX1036735	Jermains Wood, Boyles Court, Brentwood	N/A	Unknown	Low
MEX1036736	Lower Belt Wood, Boyles Court, Brentwood	N/A	Unknown	Low
MEX1036737	Manor Wood, Boyles Court, Brentwood	N/A	Unknown	Low
MEX1036759	Tyler's Shaw, Boyles Court, Upminster	N/A	Unknown	Low

Appendix L. Materials and Waste

L.1 Planning and policy context

L.1.1 Many of the relevant UK acts and regulations relating to waste, incorporate European Union (EU) directives into UK Law, these include:

- EU Revised Waste Framework Directive (2008/98/EC)
- EU Landfill Directive (1993/31/EC), as amended by the EU Directive (2003/33/EC)
- EU Regulation 1272/2008 on classification, labelling and packaging of substances and mixtures (including revisions)
- EU Directive 91/689/EEC on hazardous waste

L.1.2 Table L.1: Relevant Legislation Table summarises the legislation, regulatory and policy framework applicable to material resources and waste.

Table L.1: Relevant Legislation Table

Scale	Legislation/ regulation	Summary of requirements
National	National Planning Policy Framework (NPPF) 2018	<p>As part of the 2018 revision, the National Planning Policy Frameworks (NPPF) goal of supporting sustainable development identifies the importance of using natural resources prudently and minimising waste.</p> <p>It identifies that strategic policies should make provision for minerals and waste management.</p> <p>Section 17 focuses on “Facilitating the sustainable use of minerals”, and states planning policies should include consideration of the following points:</p> <ul style="list-style-type: none"> • provide for the extraction of mineral resources of local and national importance, except for peat; • take account of the contribution that recycled materials and minerals waste have on supply; and • safeguard mineral resources by defining Mineral Safeguarding Areas. <p>The NPPF does not contain any specific waste policies, since national waste planning policy is published as part of the Waste Management Plan for England 2013 (paragraph 5 of the introduction to the NPPF).</p>
	The Environmental Protection Act 1990 (c.43) as amended in 1996 and 1999	<p>The Environmental Protection Act 1990 (c. 43) as amended in 1996 and 1999 implements integrated pollution control for the disposal of waste to air, land and water, including solid waste disposal.</p> <p>As part of this, under Section 34, the Act imposes Duty of Care on anyone who produces, imports, keeps, stores, transports, treats or disposes of waste.</p> <p>This will mean that Highways England and all contractors must take all reasonably practical steps to ensure that:</p> <ul style="list-style-type: none"> • Waste is consigned only to a registered waste carrier, licensed waste contractor, local authority waste

Scale	Legislation/ regulation	Summary of requirements
		<p>collector or person dealing with waste in ways that are exempt from licensing;</p> <ul style="list-style-type: none"> Waste that is disposed of is accompanied by a detailed written description of the waste to ensure its safe handling, treatment and disposal (waste transfer notes are to be kept for a minimum of two years and hazardous waste consignment notes are to be kept for a minimum of three years); Waste is securely contained to prevent it escaping to the environment; Appropriate measures are taken to ensure that others involved in the handling and disposal of waste do so in accordance with the all applicable Regulations; Copies of registration certificates should be obtained for all waste contractors and waste carriers used as part of the Scheme and it should be ensured that they are on the Environment Agency's 'Public Register of Waste Carriers, Brokers and Dealers'; and Checks should be made on the final destination of each waste, ensuring that each waste disposal facility is licensed to accept the waste. Duty of Care audits of carriers and waste disposal facilities are advisable. <p>The generation of waste from the Scheme shall be managed in accordance with all applicable legislation and policy and in accordance with good practice.</p>
	Clean Neighbourhoods and Environment Act 2005 (c. 16)	Chapter 16 of the Clean Neighbourhoods and Environment Act 2005 (c. 16) prescribes the correct transportation, collection, disposal and management of waste and prohibits fly tipping.
	Waste (England and Wales) Regulations 2011 (SI 2011/988)	<p>The Regulations 2011 (SI 2011/988), as amended in 2012 (SI 2012/1889) and in 2014 (SI 2014/656), transpose the Revised EU Waste Framework Directive (2008/98/EC) into English law and require organisations to manage waste in alignment with the waste hierarchy to prevent waste going to landfill.</p> <p>Waste management contractors working on the Scheme will be required to provide evidence that the waste hierarchy has been applied. This evidence can be in the form of waste transfer notes and hazardous waste consignment notes, which themselves must be kept for two and three years, respectively.</p>
	The Hazardous Waste (England and Wales) Regulations 2005 (SI 2005/894)	<p>The Regulations, as amended in 2009 (SI 2009/507), 2015 (SI 2015/1360) and 2016 (SI 2016/336) applies to all wastes listed as hazardous in the European Waste Catalogue (2000/532/EC) and the CLP (Classification, Labelling and Packaging) Regulation (EC 1272/2008). Hazardous waste will be produced throughout all lifecycle stages of the Scheme. Hazardous waste should be disposed of in accordance with the Regulations. including a hazardous waste consignment note.</p>
	Waste Electrical and Electronic Equipment	The Regulations revoke the previous WEEE Regulations (2006 (SI 2006/3289), 2007 (SI 2007/3454), 2009 (SI 2009/2957) and 2010 (SI 2010/1155)) and have a key

Scale	Legislation/ regulation	Summary of requirements
	(WEEE) Regulations 2013 (SI 2013/3113)	<p>objective to reduce the amount of WEEE that goes to landfill. This is to be achieved by making producers responsible for the collection, treatment and recovery of WEEE, including the associated costs.</p> <p>For the Scheme being considered, all WEEE produced in the CD&E and operational phases must be segregated and managed separately from other wastes, with relevant paperwork provided as described above.</p>
	The Waste Batteries and Accumulators Regulations 2009 (SI 2009/890)	<p>The Regulations, as amended in 2015 (SI 2015/1935), main requirements are that producers of batteries and accumulators must either take back waste batteries and accumulators or fund the collection and recycling of them. The 2015 amendment removed several additional requirements, inclusive of the provision of operational plans and independent audit reports.</p> <p>For the Scheme being considered, all batteries produced in the CD&E and operational phases must be segregated and managed separately from other wastes.</p>
	The CLP (Classification, Labelling and Packaging) Regulation (EC 1272/2008)	<p>The CLP Regulation (within the UK and EU) was introduced in a staggered manner between 1999 and 2015. It should be noted that within the UK and EU, the CLP Regulation, has replaced the Dangerous Substances Directive (67/548/EEC) and the Dangerous Preparations Directive (1999/45/EC). To summarise, the Regulation provides guidance on the application of the CLP criteria for hazards (physical, health and environmental). With specific reference to the Scheme, the Regulation should be used to support the classification of both waste and materials. All waste should be classified by a six-digit code, which must be recorded on all waste transfer notes and hazardous waste consignment notes for the movement of waste from the CD&E and operational phases of the Scheme.</p>
	Environmental Protection (Disposal of Polychlorinated Biphenyls and other Dangerous Substances) (England and Wales) Regulations 2000 (SI 2000/1043)	<p>The Regulations, as amended in 2000 (SI 2000/3359), require the safe disposal or decontamination of all equipment that contains polychlorinated biphenyls (PCBs). Contaminated equipment containing over 5 litres or more of PCB substance or mixture is also covered by the Regulations. PCBs are often present in areas of historical industrial use.</p>
	The Environmental Permitting (England and Wales) Regulations 2016 (SI 2016/1154)	<p>The Environmental Permitting Regulations 2016 (SI 2016/1154) replace the 2010 Regulations (SI 2010/675) (as amended in 2011 (SI 2011/2043), 2012 (SI 2012/630) and 2014 (SI 2014/255)). The Regulations put in place requirements to ensure that sites that produce certain materials and undertake certain activities (such as the storage, use or treatment of waste) have a permit or exemption from the regulator (i.e. the Environment Agency).</p> <p>Permit or exemption details of all sites that manage waste from the Scheme will be checked to ensure waste is being managed legally.</p>

Scale	Legislation/ regulation	Summary of requirements
	National Networks National Policy Statement (NN NPS)	<p>The National Policy Statement outlines of the importance of managing resources and wastes to prevent and minimise environmental impacts. The resource and waste management measures outlined in the 'Waste Management' chapter should be adhered to and considered throughout all stages of the Scheme. Management measures are inclusive of but not limited to, the implementation of the waste hierarchy (see Figure 13-1), the correct management of waste both on-site and off-site and ensuring the appropriate waste infrastructure for waste treatment and disposal.</p>
	Environmental Damage (Prevention and Remediation) Regulations 2009 (SI 2009/153)	<p>The Regulations, as amended in 2010 (SI 2010/587), introduce obligations to ensure the polluter pays for any environmental damage caused. The Regulations are applicable to all economic activities and therefore cover businesses. The Regulations require caution to be taken when managing sites to prevent damage to water, land and biodiversity. Such damage could be caused by poor waste management practices and as such the generation of waste from the Scheme must be managed in accordance with all applicable legislation and policies and in accordance with good practice.</p>
	The Control of Asbestos Regulations 2012 (SI 2012/632)	<p>The Regulations require notification to the appropriate authority of all notifiable asbestos works (as specified in the Regulations), the medical surveillance (from April 2015) and health records for employers dealing with asbestos, the provision of the correct equipment and training for working with asbestos; and the documentation of the method, storage and disposal of asbestos waste. Any waste containing asbestos (e.g. insulation or lagging) must be stored and disposed of, in suitable packaging to prevent fibre release, in line with the Regulations. All asbestos must be removed by a licensed contractor who has undergone the appropriate training for the removal of asbestos and must wear the appropriate PPE. Written records must be kept of the workers and the likely level of exposure. The asbestos must only be disposed of at an appropriately permitted disposal site.</p> <p>These regulations will be adhered to during the construction of the Scheme to minimise harm to human health due to asbestos exposure.</p>
	Waste Management Plan for England 2013	<p>This plan provides an overview of waste management in England and fulfils the revised WFD Article 28 mandatory requirements, and other required content as set out in Schedule 1 to the Waste (England and Wales) Regulations 2011.</p> <p>DEFRA drew on issues from the previous Waste Strategy for England (WS2000), the Waste Strategy for England (WS2007), European Directives and Legislation to create the Waste Management Plan for England 2013. The Plan continues to focus on the importance of driving waste management up the waste hierarchy and states the importance of considering the Government's ambition of achieving a zero-waste economy. The Plan puts a strong emphasis on waste prevention through making products</p>

Scale	Legislation/ regulation	Summary of requirements
		using fewer natural resources. The targets outlined in WS2007 remain relevant, including the target to recover 70% of construction and demolition waste by 2020. This target shall be considered a minimum requirement for the Scheme.
	National Planning Policy for Waste 2014	The National Planning Policy for Waste is the formal replacement for Planning Policy Statement 10 (PPS10). It follows the principles set out in PPS10, which states that waste should be managed in line with the principles of the waste hierarchy. It is important to ensure that, where possible, waste production is minimised to reduce environmental impacts and to ensure an assessment is made of the local waste infrastructure type and capacities, to include, but not be limited to, an assessment of the local policies.
	Waste Planning Practice Guidance 2015	The Planning Practice Guidance website details how to adhere to the National Planning Policy for Waste 2014. The guidance should be followed to satisfy the local planning authority that impacts introduced by a proposed development on the existing waste management facilities are acceptable and do not prejudice the implementation of the waste hierarchy (see Figure 13-1).
	Road Investment Strategy and Strategic Business Plan 2015	This strategy does not refer to waste directly, however the strategy highlights Highway England’s commitment to improving and sustaining the environment. Waste management plays a role in environmental sustainability.
Regional	London Plan – Draft for Consultation 2017	The purpose of the London Plan (2017) is to implement a holistic policy framework for Greater London that is shared between all London boroughs. The overall aim of the Plan is to promote good growth. With specific regard to materials and waste, policies SI7 to SI10 focus on reducing waste arisings, managing waste in accordance with both the circular economy and waste hierarchy, safeguarding and increasing waste infrastructure capacity to achieve waste net self-sufficiency and providing sufficient aggregate supplies to enable development.
	Draft North London Waste Plan (2015)	<p>The Draft Plan, which aims to contribute to the London Plan, has three overarching priorities:</p> <ul style="list-style-type: none"> • To ensure that the North London Waste Authority boroughs (Barnet, Camden, Enfield, Hackney, Haringey, Islington and Waltham Forest) manage waste in accordance with the waste hierarchy and the proximity principle (i.e. reduced reliance on other regions/ boroughs), where practicable; • To increase the capacity provision of existing waste infrastructure and identify areas for future waste infrastructure within the NLWA boroughs; and • To set out planning policies which will be used by the NLWA to assess future waste infrastructure applications.
	Essex County Council & Southend-On-Sea Borough Council	The overarching purpose of the Waste Local Plan is to ensure both Essex and Southend-On-Sea have good provision to deal with waste arisings which prevents/

Scale	Legislation/ regulation	Summary of requirements
	Waste Local Plan (adopted 2017)	reduces damage to the environment and provides the best possible quality of life.
	Essex County Council Minerals Local Plan (adopted 2014)	The Plan provides planning policies for minerals development in Essex until 2029. In particular, it gives certainty as to the location of future minerals development. The Plan includes mechanisms aimed at reducing the demand for primary mineral use, recycling more aggregate and safeguarding mineral resources, reserves and important facilities.
	Essex Local Transport Plan (2011)	The Essex LTP states that, in order to ensure that potential side-effects from new transport infrastructure on the environment are prevented, 'sustainable design and construction practices, including the minimisation of construction waste and the use of local materials and recycled highway materials' will be promoted as part of transport infrastructure projects.
Local	London Borough of Havering Core Strategy (2008)	Policy DC41 outlines requirements relating to the 're-use and recycling of aggregates'. New developments are encouraged to: 'Recycle and re-use as aggregate, construction and demolition waste on development sites'; 'Where it is not possible to process and subsequently re-use the material within the site, to process it on-site before re-use at another site or for local land restoration'; and 'Use substitute or recycled materials in new development in place of primary minerals'.
	London Borough of Havering Local Plan Proposed Submission August (2017)	Policy 39 outlines the Council's policy concerning secondary aggregates associated with development. This policy requires 'applicants to minimise the quantity of primary aggregate and resources necessary to facilitate a development and the amount of waste generated', specifically through 'appropriate design, good practices and the recycling of construction materials containing minerals'. Policy 39 reinforces the standpoint of support for development which apply 'maximum possible rates of recovery from construction, demolition and excavation' through the 're-use and recycling of materials on-site'.
	Brentwood Replacement Local Plan (2005)	Paragraph 10.9 outlines the requirement for new development to 'make the best use of land and other resources' to 'minimise waste and allow for recycling'. In addition, paragraph 10.22 states that the Council will encourage and implement measures such as the 'recycling of waste, the conservation of resources through good design and energy efficient means of transport'.
	Brentwood Draft Local Plan (2016)	Policy 9.3 relates to the protection of landscape and the management of woodland. Proposals should provide a 'method statement for any land raising and/or dispersal of excavated or dredged materials'. Policy 10.3 concerns sustainable construction and energy. Proposals are required to 'maximise the principles of energy conservation and efficiency in the design, massing, siting, orientation, layout and use of materials'.

Appendix M. People and Communities

M.1 Planning and policy context

National policy

- M.1.1 There is no specific legislation or planning policy relating to the People and Communities assessment, however national and local policy provides direction on relevant issues, particularly transport and land use.

National Policy Statement for National Networks (NN NPS) (2014)

- M.1.2 Paragraph 2.23 sets out the Government's vision and strategic objectives for the national networks, which include improving overall quality of life, journey quality, reliability and safety and linking up communities. Junction improvement is cited as a measure which will be used to enhance the existing national road network towards this vision.
- M.1.3 Paragraph 3.3 establishes the expectation that delivery of new schemes will improve quality of life and avoid and mitigate environmental and social impacts in line with the principles set out in the NPPF and the Government's planning guidance. Furthermore, paragraph 3.19 states that schemes will be expected to improve accessibility and inclusivity and reduce community severance, to contribute to a network that provides a range of opportunities and choices for people to connect with jobs, services and friends and family.
- M.1.4 Para 5.178 states that 'When located in Green Belt national networks infrastructure projects may comprise inappropriate development. Inappropriate development is by definition harmful to the Green Belt and there is a presumption against it except in very special circumstances. The Secretary of State will need to assess whether there are very special circumstances to justify inappropriate development. Very special circumstances will not exist unless potential harm by reason of inappropriateness, and any other harm, is clearly outweighed by other considerations'.
- M.1.5 Applicants should identify existing and proposed land uses in the vicinity of the Scheme and the likely effects on these (Paragraphs 5.165 and 5.168).
- M.1.6 Agricultural land use and potential for best and most versatile land is covered in Chapter 10, Geology and Soils. Access to high quality open spaces, Public Rights of Way, the countryside and opportunities for sport and recreation can be a means of providing mitigation and/or compensation requirements for developments (Paragraphs 5.162 and 5.184)

National Planning Policy Framework (NPPF) (2018)

- M.1.7 The NPPF establishes national planning policy to achieve sustainable development, through themes which include promoting sustainable transport, supporting a prosperous rural economy and promoting healthy communities, with a presumption in favour of sustainable development.
- M.1.8 On transport, the NPPF states that the planning system should actively manage patterns of growth, focusing significant development on locations which are or can be made sustainable, limiting the need to travel and offering a genuine

choice of transport modes, which will help to reduce congestion and emissions (Paragraph 103).

- M.1.9 Paragraph 98 highlights the need to enhance the existing road network and public rights of way, by way of seeking opportunities to 'provide better facilities for users, for example by adding links to existing rights of way networks including National Trails'.
- M.1.10 To support a prosperous rural economy, planning should promote the sustainable growth and expansion of businesses and enterprise in rural areas, the diversification of agricultural and land-based rural businesses, and the retention and development of local services and community facilities (Paragraph 83).
- M.1.11 Para. 112 of the NPPF is in concert with Para. 5.168 of the NPS and requires applicants to take into account the economic and other benefits of the best and most versatile agricultural land and seek to use areas of poorer quality in preference to that of a higher quality.
- M.1.12 Social interaction, health and inclusivity are priorities for communities. Planning should thus promote safe, accessible environments and use of public areas and shared space, and protect valued facilities and services including open space, sports venues, public houses and local shops (Paragraphs 91-92).
- M.1.13 Chapter 13 of the NPPF is of particular relevance as it sets out its purpose of Green Belt designation and how development proposals should be considered in that context. Paragraph 134 defines the five purposes of Green Belt land, which are as follows:
- To check the unrestricted sprawl of large built-up areas;
 - To prevent neighbouring towns merging into one another;
 - To assist in safeguarding the countryside from encroachment;
 - To preserve the setting and special character of historic towns; and
 - To assist in urban regeneration, by encouraging the recycling of derelict and other urban land.
- M.1.14 The Government attaches great importance to areas of Green Belt; their fundamental aim being to prevent urban sprawl by keeping land permanently open. The NPPF clearly sets out that inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances (Paragraph 143). However, Paragraph 146 sets out certain forms of development which are not deemed to be inappropriate within the Green Belt, provided they preserve openness and do not conflict with purposes of including land in Green Belt. This includes, 'local transport infrastructure which can demonstrate a requirement for a Green Belt location'.

Regional policy

The London Plan (2016)

- M.1.15 Paragraph 1.39 outlines the London Plan's key objectives including supporting a city of diverse, strong secure and accessible neighbourhoods, where it is easy, safe and convenient for everyone to access opportunities and facilities with an efficient and effective transport system.

- M.1.16 Paragraph 1.56 states that quality of life constitutes a fundamental theme underpinning the Plan. Furthermore, paragraph 1.39 establishes the vital role of transport infrastructure in supporting a good quality of life, which also depends upon readily accessible community and cultural facilities, networks of green and open spaces, and local sense of safety, as set out in paragraph 1.44
- M.1.17 Policy 3.2 also reinforces the notion of promoting good health and strong communities as part of the Plan, through the consideration of the impacts of 'major development proposals on the health and wellbeing of communities', for example through the use of Health Impact Assessments (HIA).
- M.1.18 Policy 7.16 states 'the strongest protection should be given to London's Green Belt, in accordance with national guidance. Inappropriate development should be refused, except in very special circumstances'.
- M.1.19 Policy 6.12 specifies that in assessing proposals for increasing road capacity, including new roads, consideration should be given to how conditions for pedestrians, cyclists, public transport users, freight and local residents can be improved. The policy requires proposals to show overall a net benefit across these criteria and all proposals must show how disbenefits will be mitigated.

Essex Local Transport Plan (2011)

- M.1.20 The Essex LDP states that the County Council will 'continue to work in partnership with Essex Police, Essex Fire and Rescue service, the Highways Agency and the East of England Ambulance Service' in order to ensure optimum safety in all transport infrastructure projects. This is due to road deaths and serious injuries affecting whole communities in the Essex county.

Local policy

London Borough of Havering Core Strategy and Development Control Policies (2008)

- M.1.21 Havering's adopted Core Strategy aims to 'protect and strengthen what is best about Havering, to create places of real quality which are enjoyable and fulfilling to live in, and to improve social, economic, and environmental opportunities for the whole community.' To assist in meeting the Borough's aims, Development Control policies protect high quality agricultural land (DC47), existing arts and entertainment facilities (DC17), public open space, recreation, sports and leisure facilities (DC18) and access to these (DC20), and increase opportunities for countryside recreation (DC22).
- M.1.22 Havering's Core Strategy Policy DC32 states that planning permission for new road schemes will be granted where they: improve conditions for pedestrians and cyclists and disabled people by providing safe and convenient facilities; improve public transport accessibility; improve safety for all users, contribute to regeneration objectives and allocate streetspace in accordance with the London Plan.
- M.1.23 Regarding transport, the Borough seeks to 'provide choice, reduce the need to travel and promote healthier lifestyles [through walking and cycling provision] and improve the quality of life for all sections of the community, including those who are less mobile and people with impairments' as well as maintain its

'excellent road links' - the A12, A13, A127 and M25. Developers are required to take account of the needs of pedestrians (DC34) and cyclists (DC35).

- M.1.24 In terms of the Green Belt, Policy DC45 states that the Council will promote uses in the Green Belt that have a positive role in fulfilling Green Belt objectives'. Subsequently, permission will only be granted if it is for agriculture, outdoor recreation, nature conservation, mineral extraction and park and ride facilities.

London Borough of Havering Local Plan Proposed Submission (March 2018)

- M.1.25 The Havering Local Plan (2016-31) and supporting documents were submitted the Secretary of State for the Ministry of Housing, Communities and Local Government for independent examination in March 2018. Havering's vision, which will direct the Borough's development following adoption of the Proposed Submission Local Plan, focuses on four cross-cutting priorities: Communities, Places, Opportunities and Connections. Of particular relevance to people and communities are aims to help all residents 'make positive lifestyle choices' and ensure residents 'have access to vibrant culture and leisure facilities, as well as thriving town centres'. The Borough is supportive of walking and cycling provision, including shared use routes; tackling key congestion and road safety hotspots; and enhancing strategic transport links to capitalise on its location.

- M.1.26 Policy 12 relates to the notion of healthy communities, with specific reference to the Council's view to 'seek to maximise the potential health gains from development proposals' with any potentially negative impacts mitigated as far as possible. Subsequently, the policy goes on to state that all major development proposals 'must be supported by a Health Impact Assessment (HIA) to demonstrate that full consideration has been given to health and wellbeing'.

Brentwood Replacement Local Plan (2005)

- M.1.27 Policy GB1 refers to new development within the green belt. The policy states that planning permission will not be given, 'unless in very special circumstances', for construction for 'purposes other than those appropriate to a green belt,
- M.1.28 Policy GB2 states that proposals within the green belt should not 'conflict with the purposes of including land in the green belt and do not harm the openness of the green belt. Furthermore, account will also be taken of the effect on public rights of way and the need to 'preserve or enhance existing landscape features'.

Brentwood Draft Local Plan (January , 2016)

- M.1.29 General development policy 6.3 states that new development is required to 'mitigate its impact on local services and community infrastructure'. Furthermore, proposals located in close proximity to 'residential areas which may give rise to unacceptable levels of pollutants will need to be addressed through sensitive siting or pollution abatement technology'.
- M.1.30 Policy 9.8 states that the Metropolitan Green Belt will be maintained in order to protect it from inappropriate development and to:
- Preserve the Borough's special character and landscape setting;
 - Check the growth of London and prevent ribbon development and urban sprawl;
 - Prevent the coalescence of settlements;

- Assist in safeguarding the countryside from encroachment; and
- Assist in urban brownfield land reuse, by encouraging the recycling of derelict and other urban land.

M.1.31 The policy also states that proposals located in the green belt will be assessed in 'accordance with national policy and guidance. Development within the Green Belt will only be permitted if it maintains the Green Belt's openness and does not conflict with the purposes of the Green Belt or harm its visual amenities'.

M.1.32 Under Policy 9.9, within the defined Green Belt the construction of new buildings is considered inappropriate and will not be permitted. In assessing proposals for new development in the Green Belt the Council will also have regard to the objective of maintaining the openness, function and permanence of the Green Belt and:

- a. the protection of the general character and appearance of the rural area;
- b. the effect of the proposal on public rights of way;
- c. whether the proposal will diminish or support people's, tranquil enjoyment of the countryside; and
- d. the need to preserve or enhance existing landscape and ecological features.

M.1.33 The policy also states that expansion of existing inappropriate development within the Green Belt will not be permitted.

M.1.34 Policy 9.11, relating to previously developed Green Belt land, states that development will be permitted where development 'supplies or improves travel links to nearby existing communities, such as villages'.

Brentwood Community Plan

M.1.35 The Council's Mission Statement and core values are: "The Council's Mission is to serve the needs of local people and work in partnership with the whole community in order to ensure that the Brentwood Borough remains a pleasant and healthy place in which to live, work and relax for the benefit of current and future generations.

Appendix N. Climate

N.1 Planning and policy context

N.1.1 A summary of the national regional and local policies and strategies relating to both climate change sub-chapters is provided below.

National policy

National Policy Statement for National Networks (NN NPS)

N.1.2 The NN NPS paragraph 3.8 states that the impacts of road development ‘need to be seen against significant projected reductions in carbon emissions’ in order to ‘meet the Government’s legally binding carbon budgets’. This can be attributed to projected increased usage of ultra-low-emission vehicles (ULEVs) identified as overall policy.

N.1.3 Paragraph 4.41 continues the theme of projection, stating that new national networks infrastructure should be typically long-term investments which should remain operational over ‘many decades in the face of a changing climate’. Therefore, applications should ‘consider the impacts of climate change when planning location, design, build and operation’.

N.1.4 Paragraph 5.18 states that development consent should be refused if the increase in carbon emissions resulting from a proposed scheme is so significant it would have a material impact on the ability of the Government to meet its legal obligation relating to carbon reduction targets.

N.1.5 Paragraph 5.19 outlines the need for appropriate mitigation measures to be implemented in both design and construction. The effectiveness of such mitigation will be considered by the Secretary of State in order to ensure the carbon footprint is not ‘unnecessarily’.

National Planning Policy Framework (NPPF)

N.1.6 Paragraph 99 details the requirement for new development to 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 planning of green infrastructure’.

N.1.7 The NPPF highlights that the impact of road improvements on aggregate emission levels is likely to be small. However, it requires that applicants should both provide evidence of the carbon impacts of a proposed scheme and undertake an assessment of the proposed scheme against the Government’s carbon budgets.

N.1.8 Building on the NPPF, planning practice guidance published in June 2014 advises on how to identify suitable measures in the planning process to mitigate for and adapt to climate change.

N.1.9 The NPPF states that local authorities should adopt proactive strategies to mitigate and adapt to climate change.

Climate Change Act (2008)

- N.1.10 The UK has passed legislation that introduces the world's first long-term legally binding framework to tackle the risks posed by climate change. The Climate Change Act (2008) creates a new approach to managing and responding to climate change in the UK, by:
- Setting ambitious, legally binding reduction targets;
 - Taking powers to help meet those targets;
 - Strengthening the institutional framework;
 - Enhancing the UK's ability to adapt to the impacts of climate change; and
 - Establishing clear and regular accountability to the UK Parliament and to the developed legislatures.
- N.1.11 The Government has established legally binding carbon reduction targets through this Act to drive the reduction requirements required by the Kyoto Protocol (established in 1997 and commits parties to setting internationally binding emission reduction targets), as set out in Table 14.2. The overall objective is to reduce emissions by at least 80% of the 1990 base level year by 2050.

Table N.1: UK carbon reduction targets

Carbon Budget	Carbon Budget Level	Reduction Below 1990 Levels
3rd carbon budget (2018 to 2022)	2,544 MtCO ₂ e	37% by 2020
4th carbon budget (2023 to 2027)	1,950 MtCO ₂ e	51% by 2025
5th carbon budget (2028 to 2032)	1,725 MtCO ₂ e	57% by 2030

Table Source: Committee on Climate Change (2017).

- N.1.12 Key provisions of the Act in respect of climate change adaptation include a requirement for Government to report, at least every five years, on the risks to the UK of climate change, and to publish a programme setting out how these will be addressed.
- N.1.13 This Act also introduces powers for Government to require public bodies and statutory undertakers to carry out their own risk assessment and make plans to address those risks. The Adaptation Sub-Committee of the Committee on Climate Change will provide advice to, and scrutiny of, the Government's adaptation work.
- N.1.14 The Carbon Plan (2011) sets out how the UK will achieve the emissions reduction commitment of 80% by 2050, made in the Climate Change Act (2008). It sets out how the UK will make the transition to a low carbon economy, maintain energy security and minimise costs to consumers. The Plan does not relate directly to road improvement schemes, but this Scheme should support implementation of the plan by prioritising low carbon materials and construction and operational energy efficiency, where practicable.

Construction 2025

- N.1.15 Construction 2025 (2013) sets out how efficiency improvements will be created in construction covering sustainability and carbon and including a target to reduce emissions by 50%.
- N.1.16 The emissions reduction target of 50% is not scheme specific, and the efficiency improvements are broad. In terms of the Scheme and emissions reduction, the reduction target should be taken into account when developing Scheme specific mitigation measures, where relevant.

Infrastructure Carbon Review

- N.1.17 HM Treasury produced the Infrastructure Carbon Review (2013) to set out carbon reduction actions required by infrastructure organisations.
- N.1.18 In terms of the Scheme and emissions reduction, the reduction actions should be taken into account when developing Scheme specific mitigation measures, where relevant.

Road Investment Strategy: for the 2015/16 - 2019/20 Road Period

- N.1.19 The Road Investment Strategy (2015), as amended in 2016, published by the Department for Transport, sets out the strategy for the transformation of the strategic road network (SRN) by 2040 to create a modern SRN that supports a modern Britain. The Strategy also specifies objectives to significantly reduce emissions across the SRN, including emissions reductions from SRN construction activities.
- N.1.20 The Scheme should support implementation of the strategy delivering carbon requirements specified as relevant to it.

Highways England

- N.1.21 Highways England has a range of strategies, frameworks and tools in place for carbon reduction, including carbon objectives in their Sustainable Development Strategy (2017), and the Highways Agency Carbon Routemap (2014). Such strategies, frameworks and tools provide emission (i.e. carbon) projections and are intended to enable options to be considered.
- N.1.22 The Scheme should support the implementation of the strategies, frameworks and tools by delivering mitigation measures of relevance to the Scheme.

Regional policy

The London Plan

- N.1.23 Paragraph 1.48 outlines the Plan's vision to address climate change, in terms of both adaptation and mitigation. Adaptation includes designing infrastructure with a changing climate in mind and protecting, enhancing and expanding the city's stock of green space to help cool parts of the city. Mitigation includes reducing our emissions of greenhouse gases to minimise future warming and its impacts.
- N.1.24 Paragraph 6.49 concerns the need to safeguard existing and identify new facilities to distribute goods and service its people. Any development will be encouraged which eases congestion on the highway network and in turn contributes to combating climate change.

The Mayor's Transport Strategy (2010)

- N.1.25 The Mayor, through TfL, will prepare adaptation strategies to improve safety and network resilience to threats posed by climate change, and ensure that new transport infrastructure is appropriately resilient. This will include 'guidelines for major procurement contracts (including design, construction and maintenance) to demonstrate a climate risk assessment for the lifetime of the investment'.

Essex Local Transport Plan (LTP) (2011)

- N.1.26 The Essex LTP states that transport is one of the most significant contributors of the UK's CO2 emissions. Therefore, the Council has a vital role to play in helping to deliver a reduction and in supporting the transition towards a low carbon future. This will be actioned through 'minimising emissions from our own operations' and by 'working with partners to deliver new development which enables and encourages low carbon travel choices'.

Essex County Council: Corporate Emissions Strategy 2012 to 2014

- N.1.27 The aim of the Corporate Emissions Strategy (2012), issued by Essex County Council, is, with particular reference to this chapter, intended to reduce emissions from transport operations in Essex, including street lighting and maintenance activities for example.
- N.1.28 The Scheme should consider the Essex Corporate Emissions Strategy (2012), when specifying mitigation measures of relevance to the Scheme.

Essex County Council: Our Environmental Statement

- N.1.29 Essex County Council's corporate Environmental Statement 'Our Environmental Statement' includes commitments to manage the impacts of extreme weather and associated effects, as well as minimising activities that enable improved environmental performance, inherently including reducing emissions.

Essex County Council Adapting to Climate Change - Action Plan

- N.1.30 The Action Plan highlights that climate change adaptation is a critical issue Essex County Council. Its implementation will help tackle these issues at the local level to enhance adaptive capacity and minimise and takes advantage of the consequences of climate change through delivering adaptation actions. The Scheme should support the implementation of this action plan.

Highways Agency Climate Change Adaptation Strategy and Framework (2009)

- N.1.31 The Highways Agency Climate Change Adaptation Strategy and Framework (2009) has led to modifications in existing standards on the national network. Local roads are maintained by upper tier and unitary local authorities in Great Britain. For local roads, the UK Roads Liaison Group Code of Practice for Well Maintained Highways sets out a regularly updated set of recommendations for dealing with climate change by local authorities.

Highways England Sustainable Development Strategy (2017)

- N.1.32 Carbon management vision is ‘The UK has a legally-binding commitment to achieve an 80 per cent reduction in its greenhouse gas emissions by 2050. The infrastructure sector is responsible for almost one-sixth of total emissions and therefore has a key role to play in contributing to the national reduction.’
- N.1.33 The Climate Change adaptation vision is ‘in order to become more resilient to future changes in climate, which may result in more frequent and severe weather events, it is important that we adapt our network and make effective investment decisions. Climate adaptation today is tomorrow’s resilience.’

Highways Agency Carbon Routemap (2014)

- N.1.34 The Highways Agency Routemap covers the direct and indirect greenhouse gas emissions associated with the Agency’s organisational activity, the highway asset base and associated supply chain, and those arising from the use of the network by customers.

Amendment to the EIA Directive (2014/52)

- N.1.35 The requirement to consider a project’s vulnerability to climate change has resulted from the 2014 amendment to the EIA Directive (2014/52). The Directive has been fully transposed into UK law in the Town and Country Planning (Environmental Impact Assessment) Regulations and came into force in the UK on the 16th May 2017. The Directive requires: "A description of the likely significant effects of the project on climate (for example the nature and magnitude of greenhouse gas emissions) and the vulnerability of the project to climate change."

Local policy

London Borough of Havering Core Strategy 2008

- N.1.36 Policy CP15 outlines the need for development to ‘adapt to and mitigate the effects of climate change’. In order for this to take effect, new development should:

- Make efficient use of land.
- Have a sustainable water supply and drainage infrastructure.
- Adopt high standards of sustainable construction and design and to incorporate on-site renewable energy equipment to reduce predicted CO2 emissions in line with regional and national policy.

London Borough of Havering Local Plan Proposed Submission August 2017

- N.1.37 The proposed Local Plan attributes the biggest contributors to carbon emissions in the borough as domestic, industry and commercial uses. However, evidence is ‘beginning to show an overall improvement in the borough’s total CO2 emissions’. The Plan outlines the enhancement and protection of the environment, minimising the causes of climate change and adapting and mitigating of its effects as a key issue for the resulting finalised plan.

London Borough of Havering Supplementary Planning Document

- N.1.38 Sustainable Design and Construction was adopted as a Supplementary Planning Document in April 2009. It provides further guidance to scheme promoters to ensure proposals meet Development Plan policy requirements in respect of minimising impact on the causes of climate change, whilst planning for adaptation and mitigation of its effects.

Brentwood Draft Local Plan (January, 2016)

- N.1.39 Policy 10.10, concerning Green Infrastructure, requires development to adopt an integrated approach to numerous facets of sustainable development, including but not limited to climate change mitigation.
- N.1.40 Policy 10.13, relating to sustainable construction and energy, requires development to 'maximise the principles of energy conservation', as well as to 'submit details of measures that increase resilience to the threat of climate change'.

Summary

- N.1.41 Climate resilience and climate change adaptation is fast becoming an established issue in EIA policy, practice and organisational and planning policies. This is in response to legislative and regulatory drivers, but also in response to the nature of the risks and associated costs presented to projects and programmes. The consideration of climate resilience issues for the Project is therefore not only important to demonstrate compliance with these legislative and regulatory requirements, but to also demonstrate and respond to the project's long-term resilience for planning and effective and efficient operation.

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