Lower Thames Crossing

6.1 Environmental Statement Chapter 7 - Landscape and Visual (Clean version)

APFP Regulation 5(2)(a)

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

Volume 6

DATE: December 2023
DEADLINE: 9

Planning Inspectorate Scheme Ref: TR010032
Application Document Ref: TR010032/APP/6.1

VERSION: 2.0

Revision history

Version	Date	Submitted at
1.0	31 October 2022	DCO Application
2.0	11 December 2023	Deadline 9

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6.1 Environmental Statement
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7 Landscape and visual

7.1 Introduction

7.1.1 This chapter presents the assessment of the likely significant effects of the A122 Lower Thames Crossing (the Project) on the landscape resource and on visual receptors during construction and operation. Landscape considerations include landscape features and elements, landscape character, areas of particular value such as designated landscapes and conservation sites, and perceived landscape characteristics. Visual considerations include visual amenity and views experienced by people from publicly accessible viewpoints and nearby buildings, including residential properties.

7.1.2 The assessment follows the methodology set out in Design Manual for Roads and Bridges (DMRB) LA 107 Landscape and Visual Effects (Highways England, 2020a), also having regard to the Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Landscape Institute and Institute of Environmental Management and Assessment (IEMA), 2013).

7.1.3 This chapter is supported by Figures 7.1 to 7.24 (Application Document 6.2), and additional information contained in the following appendices (Application Document 6.3):

a. Appendix 7.1: Local Planning Policy of Relevance to Landscape and Visual

b. Appendix 7.2: Landscape and Visual Assessment Methodology

c. Appendix 7.3: Area of Search and Zone of Theoretical Visibility Analysis

d. Appendix 7.4: National Character Baseline Including Seascape Character, supported by Figure 7.1

e. Appendix 7.5: Local Landscape Character Baseline, supported by Figure 7.2

f. Appendix 7.6: Kent Downs Area of Outstanding Natural Beauty Relevant Guidance

g. Appendix 7.7: Representative Viewpoint and Visual Receptor Baseline Descriptions & Visual Sensitivity, supported by Figure 7.17 and Figure 7.18

h. Appendix 7.8: Technical Methodologies

i. Appendix 7.9: Schedule of Landscape Effects, supported by Figure 7.1 and Figure 7.2

j. Appendix 7.10: Schedule of Visual Effects, supported by Figure 7.16, Figure 7.17 and Figure 7.18

k. Appendix 7.11: Traffic and Noise Effects on the Kent Downs Area of Outstanding Natural Beauty, supported by Figure 7.20 and Figure 7.21

l. Appendix 7.12: Arboricultural Impact Assessment, supported by Figure 7.22, Figure 7.23 and Figure 7.24

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m. Appendix 7.13: Views from the Road Assessment

n. Appendix 7.14: Landscape and Visual Legislation and Policy

7.1.4 The chapter is also supported by Figure 2.4: Environmental Masterplan (Application Document 6.2), which shows the embedded environmental mitigation measures for the Project.

7.2 Legislative and policy framework

7.2.1 This assessment has been undertaken in accordance with relevant legislation and having regard to national, county and local plans and policies.

7.2.2 Appendix 7.14 sets out how the Applicant has considered and addressed those policies in the National Policy Statements (NPSs) which relate to the assessment of effects considered in this chapter of the Environmental Statement (ES). Policies in the NPSs which relate to decision making in relation to matters of relevance to this topic of the ES are addressed in the Planning Statement (Application Document 7.2).

7.2.3 Where relevant, designated areas and policy areas are illustrated on Figure 7.4 (Application Document 6.2). Green Belt areas are illustrated on Figure 7.7 (Application Document 6.2).

Legislative requirements

7.2.4 Relevant landscape and visual legislation that has been considered during the assessment is presented in Appendix 7.14: Landscape and Visual Legislation and Policy (Application Document 6.3).

National policy

7.2.5 Nationally Significant Infrastructure Projects (NSIPs) are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant NPSs, as well as any other matters that are both important and relevant (which may include the National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2021)).

7.2.6 The National Policy Statement for National Networks (NPSNN) (Department for Transport, 2014) sets out the Government's policies to deliver NSIPs on the national road and rail networks in England. Modifications to the nationally significant energy infrastructure are required as part of the Project. Four utilities diversions constitute NSIPs in their own right, and therefore the Project will also be assessed against the following energy policy statements:

a. Overarching National Policy Statement for Energy (EN-1) (Department of Energy and Climate Change, 2011a)

b. National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) (Department of Energy and Climate Change, 2011b)

c. National Policy Statement for Electricity Network Infrastructure (EN-5) (Department of Energy and Climate Change, 2011c).

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7.2.7 However, the NPSNN forms the 'case-making' basis for the Project, and the need for nationally significant utilities diversions arises solely from the need for the road element of the Project.

7.2.8 National Highways has taken these policy requirements into account during the development and design of the Project and the preparation of this ES.

7.2.9 The NPPF sets out the Government's planning policies. It provides a framework within which locally prepared plans for housing and other development can be produced.

7.2.10 The NPPF does not contain specific policies for NSIPs. However, the NPPF advises that local authorities' planning policies should take into account NSIPs which are located within their local areas. Paragraph 1.17 of the NPSNN states that the NPS and NPPF are consistent, and paragraph 1.18 explains that the NPPF is an important and relevant consideration, '*but only to the extent relevant to* [the] *project*'.

7.2.11 Appendix 7.14: Landscape and Visual Legislation and Policy (Application Document 6.3) lists the planning policies at a national level and the Project response.

7.2.12 Further information on how the application has responded to national planning policies is available in the Planning Statement (Application Document 7.2).

Local policy framework

7.2.13 Consideration has been given to county policies within Kent and Essex, the updated London Plan and local policies relating to landscape and visual within the following local authorities within the study area: Maidstone, Tonbridge and Malling, Gravesham, Medway, Thurrock, Havering and Brentwood. These are outlined in Appendix 7.14: Landscape and Visual Legislation and Policy (Application Document 6.3) and are considered further within the Planning Statement (Application Document 7.2). Principles contained within the Kent Downs Area of Outstanding Natural Beauty (AONB) Management Plan 2021–2026 (Kent Downs AONB Unit, 2021) are also outlined in Appendix 7.14: Landscape and Visual Legislation and Policy (Application Document 6.3).

7.2.14 Appendix 7.1: Local Planning Policy of Relevance to Landscape and Visual (Application Document 6.3) provides full extracts of planning policy relevant to this assessment.

7.2.15 The development of the design for the Project has had regard to DMRB GG 103 (Highways England, 2019) in terms of *'protecting, managing and enhancing the environment'*, as well as DMRB LD 117 Landscape Design (Highways England, 2020c) in terms of *'incorporating a sense of place'*, minimising *'the impact of landscape disturbances and destruction from temporary works'* and '*enhancing its environment'*.

7.2.16 Figure 2.4: Environmental Masterplan (Application Document 6.2) shows the embedded environmental mitigation measures along the route of the Project, proposed to help address local design policies and guidance. Section 7.5 of this chapter sets out the mitigation measures to minimise the landscape and visual effects of the Project.

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7.3 Assessment methodology

Standards and guidance

7.3.1 The following standards and guidance documents have been used in devising the methodology for data collection and assessment of landscape and visual impacts:

a. DMRB LA 107 Landscape and Visual Effects (Highways England, 2020a) (replaces DMRB Volume 11 Section 3 Part 5 Landscape Effects and Interim Advice Note 135/10)

b. Guidelines for Landscape and Visual Impact Assessment, Third Edition (GLVIA3) (Landscape Institute and IEMA, 2013)

c. GVLIA3 Statement of Clarification 1/13 (Landscape Institute, 2013)

d. An Approach to Landscape Character Assessment (Natural England, 2014a)

e. Landscape Institute Advice Note 01/11: Photography and Photomontage in Landscape and Visual Assessment (Landscape Institute, 2011)

f. Landscape Institute Technical Guidance Note: Photography and Photomontage in Landscape and Visual Impact Assessment public consultation draft 2018-06-01 (Landscape Institute, 2018)

g. Landscape Institute Technical Guidance Note 06/19: Visual Representation of Development Proposals (Landscape Institute, 2019)

h. DMRB LD 117 Landscape Design (Highways England, 2020c)

Scope of the assessment

7.3.2 In line with DMRB LA 107 (Highways England, 2020a) and GLVIA3 (Landscape Institute and IEMA, 2013), landscape and visual effects are assessed through professional judgements on the sensitivity of landscape character and visual receptors primarily represented by Representative Viewpoints, combined with the predicted magnitude of effects arising from the Project to determine the significance of effects.

7.3.3 In accordance with paragraph 3.17 of DMRB LA 107, the effects on the constituent landscape features and elements, such as trees, woodland, hedgerows and landform, have been considered in combination as part of the effects on landscape character.

7.3.4 DMRB LA 107 states within paragraph 2.3, '*LVIA, as a key tool to effective decision making that includes landscape character assessment, shall be undertaken by a Landscape Architect*'.[1]

7.3.5 DMRB LA 107 states within paragraph 2.9, '*Qualitative judgements used in landscape impact assessment and visual impact assessment shall be clear and transparent so as the reasoning applied at different stages can be understood*'.

[1] LVIA stands for Landscape and Visual Impact Assessment

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7.3.6 DMRB LA 107 states within paragraph 3.1 that '*LVIA shall identify and assess the significance of and the effects of change of a project on the landscape as a resource, and people's views and visual amenity as part of the iterative steps in assessment and design development, (GLVIA3)*'.

7.3.7 DMRB LA 107 also states in paragraph 3.4.2 that '*Assessment and reporting of the impacts on the landscape resource, and views and visual amenity from temporary construction works, should follow the wider advice and requirements found in LA 104*[2]'.

7.3.8 Landscape and visual effects have been assessed as follows:

a. Landscape (including landscape and seascape character), at the national, county and local scales, as reported in Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3). Effects on individual trees, including veteran trees, are considered in Appendix 7.12: Arboricultural Impact Assessment (Application Document 6.3).

b. Visual amenity, as represented by Representative Viewpoints and other visual receptor locations reported within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3). This is a separate but interrelated assessment of changes to the visual experience of people who live nearby or who visit the area and for people who experience the countryside for recreational purposes. Where visual receptors would only have views of construction traffic along existing main roads and no other part of the Project would be visible, these have not been included in the visual impact assessment due to the temporary and negligible change in views anticipated.

7.3.9 This chapter should be read in conjunction with Chapter 2: Project Description, in addition to Figure 7.8: ZTV (5km) – Lower Thames Crossing Main Construction Compounds Analysis, for the construction stage of the Project and Figure 2.4: Environmental Masterplan (Application Document 6.2) for the operational stage of the Project, including mitigation.

7.3.10 This chapter has interrelationships with the following ES chapters:

a. Chapter 6: Cultural Heritage, due to historic influences on the landscape and sense of 'time depth' and historical layering

b. Chapter 8: Terrestrial Biodiversity, due to the different habitat types present in the landscape and how these influence landscape character, including designated features such as ancient woodland

c. Chapter 12: Noise and Vibration, due to the influence of noise and vibration on the tranquillity of the landscape and people living, working and using recreational areas in the landscape

[2] Design Manual for Roads and Bridges, LA 104 Environmental assessment and monitoring (Highways England, 2020b)

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d. Chapter 13: Population and Human Health, due to both chapters considering changes in routes used by walkers, cyclists and horse riders (WCH), as well as to residents of private housing and users of areas of community land and facilities

Tranquillity and remoteness

7.3.11 'Tranquillity' is considered to be a state of calm and quietude and an important asset of landscape, appearing as an objective attribute in a range of strategies, policies and plans.

7.3.12 In 2004, the Campaign to Protect Rural England (CPRE) commissioned a pilot study to develop a methodology to map tranquillity. This resulted in the report Mapping Tranquillity: Defining and assessing a valuable resource (CPRE, 2005). The report developed thinking of what tranquillity is and is not and why it is important.

7.3.13 In 2006, CPRE commissioned a project to map tranquillity on a national scale (published in 2007). This was followed by the technical report Tranquillity Mapping: Developing a Robust Methodology for Planning Support (Jackson *et al*., 2008). This report highlights that tranquillity is a vital element of the countryside experience, one that can be used as a workable indicator, and that it has a meaning and significance that has resonance across different places, times and groups of people. The tranquillity map covering the study area is illustrated on Figure 7.5 (Application Document 6.2), which provides the overarching context for baseline tranquillity.

7.3.14 The Landscape Institute Technical Information Note 'Tranquillity – An Overview' (Landscape Institute, 2017) discusses what is understood by tranquillity in the landscape profession. The note concludes that '*there is no objective guidance on the subject or a consistent application of approach'*. The landscape assessment presented in this chapter of the ES has therefore considered impacts on perceived tranquillity based on the following approach.

7.3.15 A series of baseline landscape noise surveys have been undertaken at key locations where the defining characteristics include a perceived level of tranquillity. These locations and survey durations were discussed with stakeholders and include locations within the Kent Downs AONB and within its setting, locations next to the River Thames and within Orsett Fen. In addition, baseline noise surveys undertaken for Chapter 12: Noise and Vibration and reported in Appendix 12.5: Baseline Noise Survey Information (Application Document 6.3) have been considered. The locations of the baseline noise surveys are identified on Figure 7.6 (Application Document 6.2) and the baseline noise survey results are summarised in Annex A of Appendix 7.5 (Application Document 6.3). The baseline noise survey results have been used to inform the description of existing perceived tranquillity for each of the Local Landscape Character Areas (LLCAs) in Appendix 7.5 (Application Document 6.3), in conjunction with an analysis of existing features in the landscape that contribute to visual intrusion.

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7.3.16 In order to assess the impacts on perceived tranquillity during operation, noise contour mapping has been reviewed to determine the potential changes in noise levels along the Project route. This mapping is illustrated on Figures 12.7 and 12.8, Opening Year and Future Year Noise Change Contour (Application Document 6.2). The changes in noise levels have been considered in conjunction with an analysis of Project elements that would contribute to visual intrusion.

Night-time environment

7.3.17 CPRE's (2016) England's Light Pollution and Dark Skies mapping illustrates a national map of England's light pollution. In addition, the landscape and visual baseline definition considers the Guidance Notes for The Reduction of Obtrusive Light, Guidance Note 01/21 (Institution of Lighting Professionals, 2021). Environmental Lighting Zones have been identified within the LLCAs, using professional judgement and based on site surveys undertaken as part of the baseline analysis. Table 7.1 sets out the Environmental Lighting Zones as defined in Table 2 of Guidance Note 01/21. Locations of Environmental Lighting Zones are identified on Figure 7.3 (Application Document 6.2), with the approximate percentages of Environmental Lighting Zones and light sources within each LLCA set out in Annex B of Appendix 7.5 (Application Document 6.3).

Table 7.1 Environmental Lighting Zones

Zone	Surrounding	Lighting environment	Examples
E0	Protected	Dark	United Nations Educational, Scientific and Cultural Organisation (UNESCO) Starlight Reserves, International Dark-Sky Association Dark Sky Parks
E1	Natural	Intrinsically dark	National Parks, AONB
E2	Rural	Low district brightness	Village or relatively dark outer suburban locations
E3	Suburban	Medium district brightness	Small town centres or suburban locations
E4	Urban	High district brightness	Town/city centres with high levels of night-time activity

7.3.18 In order to determine the night-time effects on landscape character and views, a qualitative assessment has been undertaken in Appendices 7.9 and 7.10 (Application Document 6.3) as part of the overall assessment of effects on LLCAs and visual receptors. Construction lighting during utility works and main Project works have been considered together in the assessment of night-time construction effects.

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Green Belt

7.3.19 Much of the Order Limits that fall outside the built-up areas of Greater London's urban edge fall within the Green Belt. Green Belt is referenced within this chapter in relation to the baseline analysis of the landscape character and visual amenity. This has been used to inform the separate assessment of the extent of harm to the openness of the Green Belt, which is contained within Appendix E of the Planning Statement (Application Document 7.2). Green Belt areas are illustrated on Figure 7.7 (Application Document 6.2).

Views from the road

7.3.20 A view from the road assessment is an important design tool. The Strategic Design Panel Progress Report 4 (Highways England, 2021) recommends that '*The view of and from the road are both considered in the design of schemes to protect the character of places and enhance the experience of users and communities*'.

7.3.21 A view from the road assessment has been undertaken in accordance with DMRB LA 107 to consider driver views along the Project route. The methodology used and the assessment itself are presented in Appendix 7.13 (Application Document 6.3).

Effects of traffic and noise on the AONB

7.3.22 The effects of traffic and noise on the landscape character of the Kent Downs AONB have been assessed using a methodology agreed with the Kent Downs AONB Unit and Natural England. The methodology used and the assessment itself are presented in Appendix 7.11: Traffic and Noise Effects on the Kent Downs AONB (Application Document 6.3), with supporting information shown on Figures 7.20 and 7.21 (Application Document 6.2).

Temporal scope

7.3.23 The environmental assessment uses defined temporal scopes to characterise the duration of potential effects. The temporal scope refers to the time periods over which impacts may be experienced by receptors.

7.3.24 Temporary (short- and medium-term) effects are typically those associated with demolition and construction works, and permanent (long-term) effects are typically those associated with the completed and operational development. Therefore:

a. Short term is defined as less than five years

b. Medium term is defined as between five to 10 years

c. Long term is defined as more than 10 years

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Limits of Deviation and Rochdale Envelope

7.3.25 The Project's application of the Rochdale Envelope is summarised in Chapter 2: Project Description. The Limits of Deviation (LOD) for the Project (defined in the draft Development Consent Order (DCO) (Application Document 3.1)) represent an 'envelope' within which the Project would be constructed and have informed the reasonable worst case approach to assessment for the purposes of this chapter. For example, the worst case (taller) height of proposed earthworks has been taken into account in the landscape and visual assessment.

7.3.26 Horizontal LOD are shown on the Works Plans (Application Document 2.6), with vertical LOD described in article 6 of the draft DCO (Application Document 3.1) and related to the levels shown on the Engineering Drawings and Sections (Application Document 2.9). Horizontal and vertical LOD for the tunnel are shown on the Tunnel Limits of Deviation Plans (Application Document 2.15).

7.3.27 The Project design encompassed by the LOD has been used to prepare the Zone of Theoretical Visibility (ZTV) plans shown in Figures 7.8 to 7.15 (Application Document 6.2), Figure 2.4: Environmental Masterplan (Application Document 6.2) and Figure 7.19: Photomontages – Winter Year 1 and Summer Year 15 (Application Document 6.2), which have also been used to inform the assessment in this chapter. The LVIA takes account of the Project's LOD, and the reasonable worst-case scenario.

7.3.28 The maximum ground levels at Chalk Park and Tilbury Fields are based on the Project design as follows:

a. Chalk Park hilltop landform: 13m to 17m above existing ground level

b. Sculptural landscape mounding at Tilbury Fields: 13m to 17m above existing ground level

7.3.29 The extent of main works construction compounds and the maximum heights of components within the compounds are shown on Figure 7.8: ZTV (5km) – Lower Thames Crossing Main Construction Compounds Analysis (Application Document 6.2) and based on the following heights:

a. Up to 6m high operations: earth/material and plant storage, general access and compound activity

b. Up to 15m high operations: earth/material storage (northern tunnel entrance compound only), workers' accommodation, site offices/welfare facilities and workshops/stores, including segment factory

c. Up to 25m high operations: slurry treatment plant and concrete batching plant

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Use of the river

7.3.30 Vessel movements on the River Thames are not relevant to this assessment. This is because existing vessel movements are part of the marine character along this section of the River Thames, and an increase in vessel movements would not result in a notable change in marine character and views across the river from the northern and southern banks. Use of the river is therefore excluded from the scope of this chapter.

Scoping Opinion

7.3.31 A Scoping Report (Highways England, 2017) was submitted to the Planning Inspectorate on 2 November 2017, setting out the proposed approach to this Environmental Impact Assessment (EIA). A Scoping Opinion[3] was received from the Secretary of State (SoS) on 13 December 2017, which included comments on the scope of assessment from the Planning Inspectorate and statutory environmental bodies. These comments have been taken into account in the preparation of this chapter and Appendix 7.11 (Application Document 6.3), and the Project response is set out in Appendix 4.1: The Inspectorate's Scoping Opinion and National Highways Responses (Application Document 6.3).

Consultation

Project consultation

7.3.32 Statutory Consultation under section 42 of the Planning Act 2008 was undertaken on the Project from 10 October 2018 to 20 December 2018. This provided an opportunity for consultees to comment on the Preliminary Environmental Information Report (PEIR) (Highways England, 2018). A summary of the responses to the Statutory Consultation can be found in the Consultation Report (Application Document 5.1). Consultees comprised prescribed bodies, local authorities, people with an interest in land affected by the Project and local communities.

7.3.33 The Project design continued to be developed, which resulted in changes in the Project. These formed the basis for the Supplementary Consultation, which was undertaken from 29 January 2020 to 2 April 2020. A Design Refinement Consultation was undertaken from 14 July 2020 to 12 August 2020.

7.3.34 A Community Impacts Consultation was undertaken from 14 July 2021 to 8 September 2021. This sought feedback on the impacts of the Project at a local ward level, as well as the mitigation proposed for those impacts. Changes to the Project since the Design Refinement Consultation were also presented, along with a summary of how feedback to earlier consultation had shaped the development of the Project.

7.3.35 Prior to the submission of this DCO application, a Local Refinement Consultation was held between 12 May 2022 and 20 June 2022. This provided local communities with the opportunity to comment on proposed refinements to the Project.

[3] Scoping Opinion: Proposed Lower Thames Crossing (Case Reference TR010032) (Planning Inspectorate, 2017)

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7.3.36 These consultations all included information about the environmental impacts associated with the refinements presented for consultation. A summary of the responses to these consultation stages can also be found in the Consultation Report (Application Document 5.1).

Stakeholder engagement

7.3.37 A summary of the stakeholder engagement specific to landscape and visual during the EIA process is provided in Table 7.2.

Table 7.2 Stakeholder engagement

Stakeholder	Date of meeting/ communication	Summary of discussions
Gravesham Borough Council	2 November 2017	Meeting with officers to discuss Project updates including landscape character baseline, the Project ZTV and selection of emerging Representative Viewpoints for assessment of visual effects. Agreement of initial Representative Viewpoints to be considered, as well as character assessment baseline.
Natural England, Kent Downs AONB Unit	6 November 2017	Meeting to update on the Project, development boundary [Order Limits], EIA and landscape surveys and to discuss the ZTV. It was agreed an additional viewpoint on the local road, Shorne Ifield Road (to the south of Harts Hill) west of Shorne would be added.
Essex County Council (Place Services)	17 November 2017	Meeting with officers to discuss Project updates including landscape character baseline, the Project ZTV and selection of emerging Representative Viewpoints for assessment of visual effects. Agreement to extend the Project operational phase ZTV to 5km and selection of Representative Viewpoints beyond the suggested 2km study area, and agreement of baseline landscape character assessment studies. Suggestion to include construction phase ZTVs.
Thurrock Council	21 February 2018	Meeting with officers to discuss Project updates including landscape character baseline, the Project ZTV and selection of emerging Representative Viewpoints for the assessment of visual effects. Noted the forthcoming update to the Thurrock Landscape Capacity Study which should inform the assessment when published. Agreement to extend the ZTV beyond the current 2km extent.
Medway Council	24 April 2018	Meeting with officers to discuss Project updates including landscape character baseline, the Project ZTV, and selection of emerging Representative Viewpoints for assessment of visual effects. Acceptance of proposed approaches discussed.

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Stakeholder	Date of meeting/ communication	Summary of discussions
Natural England, Kent Downs AONB Unit	7 August 2018	Meeting to provide an update on Project development, potential impacts to Kent Downs AONB, mitigation options and next steps and to explain the potential changes and challenges of the Project before Statutory Consultation.
Kent County Council, Gravesham Borough Council, Medway Council, Natural England, Kent Downs AONB Unit, Essex County Council, Thurrock Council, London Borough of Havering, Brentwood Borough Council	22 August 2019	Email – Landscape and Visual Assessment Representative Viewpoint Consultation – Post PEIR. This included a refined Project ZTV and analysis and justification of the rationale for selecting the study area for the assessment of landscape and visual impacts, which is assumed to be within 2km as set out previously at PEIR. Following the email, statutory consultee responses were received, and feedback incorporated into the selection of the 88 Representative Viewpoint locations to be used for the assessment of impacts on visual amenity and to inform the landscape assessment. *(Post consultation note: a further 13 Representative Viewpoint locations have been added since agreement with stakeholders, relating to the nitrogen deposition compensation sites. Due to the nature of the proposals for the nitrogen deposition compensation sites, these viewpoint locations have not been discussed with stakeholders.)*
Historic England and Gravesham Borough Council	18 February 2019	Heritage Site Walkovers – South. Walkover surveys/site visit provided an opportunity to agree the key areas for addressing setting issues and to raise any concerns regarding the Project design or specific heritage assets. It was agreed that a selection of heritage assets potentially affected by the Project would be visited to establish the degree of inter-visibility with the Project and the key viewpoints of the Project from the surrounding landscape. It was agreed that Cobham Hall historic parkland would be added as an additional viewpoint, and it was highlighted that lighting during construction and operation, and cumulative impacts of lighting at night from various schemes such as Tilbury2, should be considered.
Thurrock Council	20 February 2019	Site walkover for agreement of Representative Viewpoints. Additional Representative Viewpoints and amendments to current selections requested and agreed locations confirmed, including horizontal field of view requirements.
Kent Downs AONB Unit and Natural England	February/March 2019	Email – landscape tranquillity assessment locations for noise monitoring and durations within the Kent Downs AONB. Agreement with statutory consultees on locations for noise surveys.

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Stakeholder	Date of meeting/ communication	Summary of discussions
Kent County Council, Gravesham Borough Council, Medway Council, Natural England, Kent Downs AONB Unit	11 April 2019	Email – Representative Viewpoints. Further clarifications on final photomontage locations and the methodology for selection of locations and production. Feedback to be discussed during site walkovers.
Natural England, Kent Downs AONB Unit, Essex County Council, Thurrock Council, London Borough of Havering, Brentwood Borough Council	11 April 2019	Email – Representative Viewpoints. Further clarifications on final photomontage locations and the methodology for selection of locations and production. Feedback to be discussed during site walkovers with respective site surveys.
Essex County Council, Thurrock Council, London Borough of Havering	2 May 2019	Site walkover – to visit Representative Viewpoint locations to be used for photomontages and agree/discuss methodologies and selections shared via email on 11 April 2019. Acceptance of methodologies used to prepare photomontages and Representative Viewpoint photography. Collective agreement with stakeholders on additional photomontage requirements.
Essex County Council, Thurrock Council, London Borough of Havering	23 May 2019	Email – issue of plan following site walkover meeting on 2 May 2019 confirming all Representative Viewpoint and photomontage locations being considered.
Gravesham Borough Council, Natural England, and Kent Downs AONB Unit	19 June 2019	Site walkover – agreement of Representative Viewpoints and photomontage locations. Acceptance of methodologies used to prepare photomontages and Representative Viewpoint photography. Two additional Representative Viewpoint locations (S-05a and S-20a) requested to be used to replace suggested photomontage locations (S-05 and S-20). Additional photomontage locations requested and accepted at Viewpoints S-12 and S-31. Collective agreement with stakeholders on additional photomontage requirements.
Natural England and Kent Downs AONB Unit – Traffic and Noise Effects on Kent Downs AONB	9 October 2019	Meeting – established that the focus of the assessment should be on the road network experiencing changes within the AONB and should include minor roads as well as the strategic road network, although the latter was noted to potentially

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Stakeholder	Date of meeting/ communication	Summary of discussions
		be of reduced importance due to the presence of notable existing vehicle flows.
Natural England and Kent Downs AONB Unit – Traffic and Noise Effects on Kent Downs AONB	3 February 2020	Email – issue of additional draft information for discussion, including a series of plans with an accompanying Excel spreadsheet setting out the findings from further analysis of the operational phase traffic data applying the thresholds that were previously discussed.
Natural England and Kent Downs AONB Unit – Traffic and Noise Effects on Kent Downs AONB	6 February 2020	Meeting – to discuss the approach to the impact assessment, including thresholds and network links to be considered. This involved reviewing figures and spreadsheets considering the 24-hour changes between the 'Do Minimum' and 'Do Something' scenarios for the operational phase. Thresholds to be applied to each road class type were subsequently agreed with stakeholders. A request was made for the same exercise to be undertaken for the construction phase traffic data. Discussions included relationship of this assessment to the Rural Lanes Study and also the impacts on the special characteristics of the AONB. A request was made for a further meeting with the Project team, which was subsequently held to explain the Project's transport model, the Lower Thames Area Model l.
Natural England and Kent Downs AONB Unit – Traffic and Noise Effects on Kent Downs AONB	12 June 2020	Email – issue of additional draft information for discussion, including a series of plans with an accompanying spreadsheet setting out the findings from further analysis of the traffic data for the construction and operational phases of the Project, applying the thresholds that were previously discussed and agreed. This information confirmed the roads to be considered within the assessment.
Natural England and Kent Downs AONB Unit	17 June 2020	Meeting – to discuss the draft conclusions of the landscape and visual assessment, and discussion of the Environmental Masterplan and mitigation measures proposed within the Kent Downs AONB. Examples were requested of vertical barrier precedents for a potential visual/acoustic 'green wall' along the A2 corridor. However, the proposed barrier alongside Park Pale has now been omitted because proposed noise reducing surfacing has made it unnecessary for noise mitigation and design refinements have made it possible to retain more of the existing tree screening between Park Pale and the A2 corridor.
Essex County Council, Thurrock	25 June 2020	Environmental Impact and Mitigation and Register of Environmental Actions and Commitments (REAC)

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Stakeholder	Date of meeting/ communication	Summary of discussions
Council, London Borough of Havering, Environment Agency, Natural England, Historic England, Medway Council, Kent Downs AONB, Forestry Commission, Kent County Council, Gravesham Borough Council		Review Workshop – to present the draft conclusions of the ES, the REAC and embedded mitigation as shown on the Environmental Masterplan. There were no new actions agreed relating to landscape and visual impact assessment.
Natural England and Kent Downs AONB Unit	02 June 2021	Meeting to discuss effects on the Kent Downs AONB, at which forthcoming adoption of the updated 2021–2026 Management Plan for the AONB was noted. It was agreed that references to the Environmental Masterplan and photomontages would be strengthened in Chapter 7: Landscape and Visual, to aid understanding of the assessment and that assumptions for the assumed height of planting mitigation in the design year (15 years after opening) would be set out. It was confirmed that the implications of ash dieback had been considered in the assessment in Chapter 7.
Natural England and Kent Downs AONB Unit	22 June 2022	Meeting to discuss updates to the assessment of traffic and noise effects on the Kent Downs AONB in Appendix 7.11 of the ES, at which Natural England and Kent Downs AONB Unit confirmed agreement in principle to the revised methodology.

Study area

7.3.38 The study area for landscape and visual is illustrated in Figure 7.1 (Application Document 6.2). The rationale for the definition of the study area is set out below. The same study area has been used for the construction phase and operational phase assessments.

7.3.39 In accordance with DMRB LA 107 (Highways England, 2020a), the study area for the purposes of the landscape and visual impact assessment presented in this chapter has been identified having regard to the following factors:

a. The Order Limits (including construction compounds, utility diversion works and temporary land-take)

b. The wider landscape setting within which the Project and related construction activity has the potential to influence

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c. The extent of the Project visible from the surrounding area, including Representative Viewpoints

d. The full extent of adjacent or affected landscape receptors of special value (for example, designated areas) whose setting could be influenced by the Project

e. The extent of adjacent or affected visual receptors and visual amenity of the area that can be influenced by the Project

7.3.40 The approach to defining the study area is explained below, after the section explaining the supporting ZTV analysis. Initially, a 5km 'area of search' was used for the desk-based study and ZTV extents, as agreed with stakeholders. This is considered to be proportionate to the geographical extent of landscape and visual effects likely to result from the Project. Generally, the approach to defining the study area has included:

a. Establishing the area of search and agreeing with stakeholders (refer to Table 7.2 for details of consultation)

b. ZTV analysis (refer to section below)

c. Stakeholder consultation (refer to Table 7.2 for details of consultation)

d. Refinement of study area using site appraisal and professional judgement based on topography, other elements limiting the extent of visibility, for example, intervening buildings and vegetation, and proportionality based on the scale and nature of effects likely to occur

7.3.41 The basis for the identification of potential cumulative effects in relation to the landscape and visual study area is set out in Chapter 16: Cumulative Effects Assessment. The assessment of cumulative effects considers both significant and non-significant effects of the Project in relation to third party development projects.

Zone of Theoretical Visibility

7.3.42 This section summarises the ZTV analysis undertaken, which is described in more detail in Appendix 7.3: Area of Search and Zone of Theoretical Visibility Analysis and Appendix 7.8: Technical Methodologies (Application Document 6.3). The ZTVs shown on Figures 7.8 to 7.15 (Application Document 6.2) provide an indication only of the theoretical maximum extent to which the Project may be visible from the surrounding landscape.

Construction phase

7.3.43 To inform the study area for landscape and visual assessment, a ZTV has been prepared to consider the main works construction compounds set to a 5km extent using Digital Terrain Model (DTM) data. This is illustrated on Figure 7.8 (Application Document 6.2). A ZTV has not been prepared for the Utility Logistics Hubs given the lower height of features compared to the main works construction compounds and therefore the more limited extent of visibility.

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7.3.44 A ZTV has not been prepared for construction activities along the Project route because the likely extent of visibility would be similar to that during operation, for which other ZTVs have been prepared as explained below.

Operational phase

7.3.45 The study area has been informed by the ZTVs that have been prepared for each section of the Project route, covering an area up to 5km from the Project route. These distances were considered appropriate based on the nature of the Project and the surrounding landscape, including topography, scale and landform pattern, and were agreed with stakeholders.

7.3.46 A range of DTM and Digital Surface Model (DSM) data was used to prepare the ZTVs. The DSM data incorporates the visual screening effects of existing built form and vegetation, which would reduce visibility of the Project. Further ZTV analysis including the visual screening effects of the proposed embedded earthwork mitigation measures has also been undertaken.

7.3.47 ZTV analysis considered both the vertical and horizontal alignment of the Project road, including overbridge structures and side roads as well as vehicle heights.

7.3.48 The ZTVs prepared are summarised below:

a. 5km DTM Overview of Project Highway Analysis, as illustrated on Figure 7.10 (Application Document 6.2)

b. 5km DTM Project Highway Section Analysis, as illustrated on Figure 7.11 (Application Document 6.2)

c. 2.5km DSM Overview of Project Highway Analysis, as illustrated on Figure 7.12 (Application Document 6.2)

d. 2.5km DSM Project Highway Section Analysis, as illustrated on Figure 7.13 (Application Document 6.2)

e. 2.5km DSM Overview of Project Highway Analysis with Earthwork Mitigation, as illustrated on Figure 7.14 (Application Document 6.2)

f. 2.5km DSM Project Highway Section Analysis with Earthwork Mitigation, as illustrated on Figure 7.15 (Application Document 6.2)

7.3.49 The Project includes the realignment of existing overhead electricity infrastructure. A comparative ZTV covering an area up to 5km using DTM data has been produced, as illustrated on Figure 7.9 (Application Document 6.2). This ZTV identifies areas where the realigned overhead electricity infrastructure would result in either a greater or lesser extent of visibility, or no change in visibility within the 5km area of search.

Refined study area

7.3.50 Following consultation with stakeholders and review of the extensive ZTV analysis, site survey and analysis of baseline photography, a refined study area extending up to 2km from the Project route has been defined for the assessment of effects on landscape character and visual amenity during both the construction and operational phases of the Project. The refined study area

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is shown as an orange line in Figures 7.1 to 7.4 and 7.16 (Application Document 6.2). In some areas, this includes views that are greater in distance than 2km when looking obliquely along the line of the Project route within the study area.

7.3.51 Definition of the refined study area has been informed by existing topography and the presence of features such as existing buildings and vegetation, that limit the extent to which the Project would be visible from the surrounding landscape, in accordance with Section 3.32 of DMRB LA 107. An example of this is along the A2 corridor where existing woodland adjoining the Order Limits constrains the extent of views towards the Project. While the Project may be visible beyond the refined study area, effects are unlikely to be significant due to a combination of distance and the wider visual context. For example, visual effects from the seven Representative Viewpoints identified outside of the refined study area would not be significant. These outlying views have been included in the assessment at the request of stakeholders or because they typify views from elevated positions within the wider landscape, including valued views.

7.3.52 The resulting refined study area is considered to be proportionate to the nature and scale of the Project and encompass the likely significant landscape and visual effects, as well as effects unlikely to be significant. This is in accordance with the NPSNN (Department for Transport, 2014), which states the landscape and visual assessment will focus on those receptors '*significantly affected by the project*'. The refined study area does not therefore include every landscape or visual receptor from which there would be visibility of the Project.

7.3.53 The refined study area is also in accordance with DMRB LA 107 Landscape and Visual Effects (Highways England, 2020a) which states, '*Environmental assessments must … identify, describe and assess the likely significant effects of a project on the landscape (i.e. the direct and indirect change to the landscape character, the landscape quality/condition, and the visual amenity and visual receptors)*.'

Impact assessment methodology

7.3.54 The assessment follows the general approach described in Chapter 4: EIA Methodology. This section provides topic-specific information regarding the methodology used for establishing the baseline conditions, and the methods used for the construction and operational phase assessments.

Method of establishing baseline conditions

Existing baseline

7.3.55 The existing baseline in relation to landscape and visual was established based on data collection, consultation, modelling studies and site surveys. A 5km area of search has been used to compile Project related information on National Character Area (NCA) profiles and tranquillity mapping, while a 2km area of search has been used for LLCAs and visual receptors.

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Desk-based studies

7.3.56 A desk-based review of the following data sources has been undertaken to determine the baseline conditions across the Project study area.

Landscape character

7.3.57 Baseline landscape information has been gathered from publicly available publications commissioned by Natural England, the Marine Management Organisation, the Kent Downs AONB Unit, Kent County Council, Gravesham Borough Council, Maidstone Borough Council, Medway Council, Thurrock Council and Land of the Fanns Landscape Partnership. The Project route passes through or close to a range of nationally and locally defined character areas, identified within the following published landscape characterisation documents:

a. NCA profiles for NCA 119: North Downs, NCA 113: North Kent Plain, NCA 81: Greater Thames Estuary and NCA 111: Northern Thames Basin (Natural England, 2014b)

b. Seascape Character Assessment for the South East Inshore marine plan area (Marine Management Organisation, 2018)

c. Maidstone Landscape Character Assessment (Maidstone Borough Council, 2012, amended in 2013)

d. Medway Landscape Character Assessment (Medway Council, 2011)

e. Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023)

f. Gravesham Landscape Character Assessment (Gravesham Borough Council, 2009)

g. Landscape Capacity Study (Thurrock Council, 2005)

h. Land of the Fanns Landscape Character Assessment (The ‘Land of the Fanns’ Landscape Partnership Scheme, 2016)

i. The Landscape Assessment of Kent (Kent County Council, 2004)

7.3.58 The above landscape character studies and the boundaries of character areas identified in the studies have been used to inform the definition of the LLCAs, which have been used as a basis for the assessment of effects on the landscape at the local level. In a limited number of locations, the boundaries of the published character areas have been slightly adjusted through detailed study and analysis undertaken for the LVIA in this chapter.

7.3.59 The West Kent Downs sub areas Cobham and Shorne within the West Kent Downs Landscape Character Area (LCA) 1A of the Kent Downs AONB Landscape Character Assessment Update have informed the definition of LLCA boundaries within the part of the AONB that lies within the study area along the A2 corridor. Within the AONB, these LLCAs have taken precedence over the

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overlapping Gravesham Landscape Character Assessment, due to the more recent nature of the Kent Downs AONB Landscape Character Assessment Update.

7.3.60 The Mid Kent Downs sub area Bredhurst, Hollingbourne Scarp and Vale sub area Boxley Vale and Medway Valley sub area The Eastern Scarp character areas from the Kent Downs AONB Landscape Character Assessment Update, have informed the definition of LLCA boundaries within the AONB near junction 3 of the M2 and the proposed Blue Bell Hill nitrogen deposition compensation site. Within the AONB, these LLCAs have taken precedence over the overlapping Maidstone Landscape Character Assessment, due to the more recent nature of the Kent Downs AONB Landscape Character Assessment Update.

7.3.61 The Medway Valley sub area The Eastern Scarp, Mid Kent Downs sub area Bredhurst and Mid Kent Downs sub area Nashenden Valley character areas from the Kent Downs AONB Landscape Character Assessment Update, have informed the definition of LLCA boundaries within the AONB to the south-west of junction 3 of the M2 encompassing and in the vicinity of the proposed Burham nitrogen deposition compensation site (omitted from the Project design post DCO submission). Within the AONB, these LLCAs have taken precedence over the overlapping Landscape Assessment of Kent, due to the more recent nature of the Kent Downs AONB Landscape Character Assessment Update.

7.3.62 Outside of the AONB to the south of the River Thames, the LLCA boundaries have primarily been informed by the Gravesham Landscape Character Assessment, although the Higham Arable Farmland character area has been split into three sub areas following site appraisal and analysis (sub area Thong, sub area Chalk and sub area Gadshill). In addition, the part of the Shorne Woodlands character area outside of the AONB has been renamed as Shorne Wooded Slopes.

7.3.63 North of the River Thames, the LLCA boundaries have either been informed by Thurrock Council's Landscape Capacity Study or the Land of the Fanns Landscape Character Assessment. Thurrock Council's Landscape Capacity Study is partially overlapped by the more recent Land of the Fanns Landscape Character Assessment. For the purposes of the landscape and visual impact assessment in this chapter, the A13 and the urban area of Grays have been taken as the transition between these two landscape character assessments. The LLCAs shown in Figure 7.2 (Application Document 6.2) are based on the Thurrock Landscape Capacity Study character areas south of the A13/east and north-east of Grays and the Land of the Fanns Landscape Character Assessment character areas to the north of the A13/west of Grays.

7.3.64 The Thurrock Reclaimed Fen character area from the Land of the Fanns Landscape Character Assessment has been split into two sub areas following site appraisal and analysis. This is due to the difference in character between the low-lying, large-scale, flat inland basin associated with the upper reaches of the Mardyke (sub area Mardyke), and the landscape associated with Thames Chase Forest Centre to the west of the M25 (sub area Thames Chase).

7.3.65 The Landscape Assessment of Kent (Kent County Council, 2004) was prepared in 2003 and considered the landscape south of the River Thames at a county

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scale. Given the absence of a characterisation study for Dartford, the Kent County Council character assessment has been partially considered but is otherwise largely discounted.

7.3.66 Forthcoming updates to the published Thurrock Landscape Capacity Assessment in 2022 have not been considered at this stage, as this information was not publicly available in sufficient time for DCO submission [unpublished as of 15 September 2022].

7.3.67 In addition to the above characterisation studies, the Kent Downs AONB Setting Position Statement (Kent Downs AONB Joint Advisory Committee, 2020) was also considered. Appendix 7.6 (Application Document 6.3) provides relevant extracts of the published statement.

Visual amenity

7.3.68 In agreement with stakeholders, 89 Representative Viewpoints (including a view north and south from S-38 split into S-38a and S-38b) have been selected to assess the visual effects of the Project. In order to assess visual effects relating to the nitrogen deposition compensation sites, a further 13 Representative Viewpoints have been added since agreement with stakeholders. The locations of Representative Viewpoints are shown on Figure 7.16 (Application Document 6.2), with baseline views described in Appendix 7.7 (Application Document 6.3). These Representative Viewpoints have been selected to represent the views experienced by different types of nearby visual receptor, to avoid showing larger numbers of receptor locations where the significance of effects are unlikely to differ. (Visual receptors are people engaged in different types of activity, such as users of Public Rights of Way (PRoWs) or people with proprietary views, such as residents at their homes.) All Representative Viewpoints have been visited onsite by a landscape architect, with some Representative Viewpoints visited in conjunction with stakeholders. (Refer to the Fieldwork section below for details of site visits and Table 7.2 for details of site visits undertaken with stakeholders.)

7.3.69 In addition to Representative Viewpoints, a range of visual receptors has been identified separately in Appendix 7.7 (Application Document 6.3) for residential receptors, users of PRoWs and recreational areas, users of transport routes and ‘other’ receptors such as industrial areas, schools and churches. Due to the nature of the proposals for the nitrogen deposition compensation sites, Representative Viewpoints have been identified to include the main visual receptors likely to be affected.

7.3.70 Where the location of a visual receptor coincides with a Representative Viewpoint, the visual impact assessment for the corresponding receptor forms part of the assessment of visual effects for the Representative Viewpoint. Nearby visual receptors of the same receptor type and sensitivity and with the same or similar baseline views have also been linked to relevant Representative Viewpoints for the purposes of assessment.

7.3.71 Where visual receptors do not coincide or correspond with a Representative Viewpoint location, these have been identified separately on Figure 7.16. (Application Document 6.2). Visual receptors of the same type and sensitivity and with the same or similar baseline views have been grouped together for brevity. For residential receptors, the assessment of receptor groups is based

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on worst-case views and not all properties within a group would necessarily experience the same level of effect. The description of baseline views in Appendix 7.7 (Application Document 6.3) is based on desk-based appraisal, supported by site survey including a site visit in spring 2022 to check the appraisal of a wide selection of visual receptors located along the length of the Project route. The site visit in spring 2022 covered a selection of:

a. Visual receptors on the edge of Strood, Cobham, Gravesend, Chalk and Shorne

b. Isolated visual receptors between Istead Rise and Jeskyns Community Woodland, and east of Chalk

c. Visual receptors on the edge of Tilbury, East Tilbury, West Tilbury, Chadwell St Mary and Orsett

d. Isolated visual receptors adjoining the M25 corridor

7.3.72 To inform the night-time baseline condition, the current Environmental Lighting Zones covering the Project route, the Order Limits and 2km area of search have been identified and described in Appendix 7.5 (Application Document 6.3).

Fieldwork

7.3.73 Baseline field surveys have been undertaken at multiple stages of the Project development. These are summarised as follows:

a. Winter 2017/2018 surveys, to inform the baseline area of search and compilation of information for the PEIR and undertake preliminary photography

e. Winter 2018 night-time survey, to inform the baseline night-time environment zones and undertake preliminary night-time photography

f. Winter 2018/2019 surveys, to undertake winter baseline viewpoint photography and night-time viewpoint photography from the Representative Viewpoint locations agreed with stakeholders

g. Spring 2019 surveys, to collect baseline noise data from agreed locations to inform the tranquillity assessments in combination with the acoustic consultant team

h. Early summer 2019 surveys, to undertake summer baseline viewpoint photography for landscape and heritage receptors from the Representative Viewpoint locations agreed with stakeholders

i. Late summer 2019 surveys, to undertake additional summer baseline viewpoint photography from the Representative Viewpoint locations agreed with stakeholders

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j. Winter 2019/2020 surveys, to undertake additional winter baseline viewpoint photography from the Representative Viewpoint locations agreed with stakeholders

k. Winter 2021/2022 surveys, to determine whether baseline landscape and visual conditions had changed since initial survey work

l. Winter 2021/2022 surveys, to undertake viewpoint photography and assessment work for the nitrogen deposition compensation sites

m. Winter 2021/2022 surveys, to undertake updated viewpoint photography where the visual baseline had changed since initial survey work

n. Spring 2022 surveys, to undertake a review of the visual baseline/assessment for a selection of visual receptors along the Project route

o. Summer 2022 surveys, to undertake updated viewpoint photography where the visual baseline had changed since initial survey work and to undertake assessment work for a further nitrogen deposition compensation site at Burham (omitted from the Project design post DCO submission)

7.3.74 Field survey work used 4G enabled tablets, where practicable, to help inform the assessment process and undertake recordings onsite. The viewpoint photography methodology is detailed in Appendix 7.8. (Application Document 6.3).

Future baseline ('Without Scheme' scenario)

7.3.75 The existing landscape is dynamic and constantly changing due to natural and human influences such as erosion, agriculture, forestry and development. It is not possible to accurately predict how the landscape is likely to change over time, for example, there could be changes in future farming practices, the condition of existing landscape elements could change due to changing management practices and climate change could alter the composition of vegetation as a result of changing weather patterns. New development is also likely to alter landscape character and views.

7.3.76 As part of establishing the baseline conditions, the following main areas of change have been considered to determine their potential influence on landscape character and views:

a. Climate change

b. Pests and diseases

c. Establishment and growth of young woodland plantations

d. Planning allocations and planning application consents

e. Ongoing mineral extraction and landfill and associated restoration works

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Method of assessment – construction

7.3.77 The assessment of construction effects has considered the reasonable worst-case situation whereby construction activity is at its peak and is assumed to occur over a medium-term period of time.

Method of assessment – operation

7.3.78 The assessment of operational effects has considered the following:

a. Opening year – a winter's day in the year that the Project would open to traffic or be fully operational (i.e. with noise/visual screens and false cutting earthworks in place but before any planted mitigation has begun to take effect), with all construction activity completed. This reflects the reasonable worst-case scenario in which the Project is in operation and most visible. This has included assessment of the qualitative changes to the night-time environment.

b. Design year – a summer's day 15 years after opening (i.e. when the planted mitigation measures can be assumed to be substantially effective). A winter's day 15 years after opening has also been reported to identify any seasonal variation, where applicable. The design year has included assessment of the qualitative changes to the night-time environment.

Determining significance of effects

7.3.79 As described in Chapter 4: EIA Methodology, the significance of environmental effects was determined by taking into account the sensitivity of the receptor and the magnitude of the impact (or magnitude of effect as described in DMRB LA 107 (Highways England, 2020a)).

7.3.80 The following paragraphs set out the sensitivity and magnitude of effect criteria used in this assessment, based on DMRB LA 107. Significance of effect was then determined using the matrix approach shown in Table 4.3 of Chapter 4: EIA Methodology and the application of professional judgement.

7.3.81 The assessment of significance undertaken in this chapter is used as the basis for identifying effects which are considered significant in the context of the Infrastructure Planning (EIA) Regulations 2017 (the EIA Regulations).

7.3.82 Full details of the assessment methodology for landscape and visual effects are presented in Appendix 7.2 (Application Document 6.3).

Defining sensitivity of resources and/or receptors

Assessment of effects on landscape (including landscape and seascape character)

7.3.83 The sensitivity of the identified receptors/resources was determined using the criteria shown in Table 7.3 having regard to both the value of a landscape receptor (Table 3.1 of Appendix 7.2 (Application Document 6.3)) and its ability to accommodate specific change (Table 3.2 of Appendix 7.2 (Application Document 6.3).

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Table 7.3 Landscape – criteria used to define sensitivity of the landscape resource (DMRB LA 107, Table 3.22)

Landscape sensitivity (susceptibility and value) of receptor/resource	Typical descriptors and examples
Very high	Landscapes of very high international/national importance and rarity or value with no or very limited ability to accommodate change without substantial loss/gain (i.e. national parks, internationally acclaimed landscapes – UNESCO World Heritage Sites).
High	Landscapes of high national importance containing distinctive features/elements with limited ability to accommodate change without incurring substantial loss/gain (i.e. designated areas, areas of strong sense of place – registered parks and gardens, country parks).
Medium	Landscapes of local or regional recognition of importance able to accommodate some change (i.e. features worthy of conservation, some sense of place or value through use/perception).
Low	Local landscape areas or receptors of low to medium importance with ability to accommodate change (i.e. non-designated or designated areas of local recognition or areas of little sense of place).
Negligible	Landscapes of very low importance and rarity able to accommodate change.

Assessment of effects on visual amenity

7.3.84 The sensitivity of the identified receptors/resources was determined using the criteria shown in Table 7.4 having regard to both the value of a visual receptor and its ability to accommodate specific change. The identification of various categories of visual receptor (viewer), and the assumed visual sensitivity of each, forms part of the visual baseline against which the change in the view brought about by the Project can be assessed. Table 7.4 identifies typical examples of visual receptors and their associated sensitivities.

Table 7.4 Visual – criteria used to define visual sensitivities (DMRB LA 107, Table 3.41)

Visual sensitivity (susceptibility and value) of receptor/resource	Typical descriptors and examples
Very high	• Static views from and of major tourist attractions • Views from and of very important national/international landscapes, cultural/historical sites (e.g. national parks, UNESCO World Heritage Sites) • Receptors engaged in specific activities for enjoyment of dark skies
High	• Views by users of nationally important PRoW/recreational trails (e.g. National Trails, long distance footpaths)

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Visual sensitivity (susceptibility and value) of receptor/resource	Typical descriptors and examples
	• Views by users of public open spaces for enjoyment of the countryside (e.g. country parks) • Static views from dense residential areas, longer transient views from designated public open space, recreational areas • Views from and of rare designated landscapes of national importance
Moderate	• Static views from less populated residential areas, schools and other institutional buildings and their outdoor areas • Views by outdoor workers • Transient views from local/regional areas such as public open space, scenic roads, railways or waterways, users of local/regional designated tourist routes of moderate importance • Views from and of landscapes of regional importance
Low	• Views by users of main roads or passengers in public transport on main arterial routes • Views by indoor workers • Views by users of recreational/formal sports facilities where the landscape is secondary to enjoyment of the sport • Views by users of local public open spaces of limited importance with limited variety or distinctiveness
Negligible	• Quick transient views such as from fast moving vehicles • Views from industrial area, land awaiting re-development • Views from landscapes of no importance with no variety or distinctiveness

Defining magnitude of effect

Assessment of effects on landscape (including landscape and seascape character)

7.3.85 The magnitude and nature of effect on receptors/resources was determined using the criteria outlined in Table 7.5.

Table 7.5 Landscape – indicative criterial used to define magnitude and nature of effects (DMRB LA 107, Table 3.24)

Magnitude and nature of effect	Typical criteria descriptors
Major adverse	Total loss or large-scale damage to existing landscape character or distinctive features and elements, and/or the addition of new uncharacteristic, conspicuous features or elements (i.e. road infrastructure).
Moderate adverse	Partial loss or noticeable damage to existing character or distinctive features and elements, and/or the addition of new uncharacteristic, noticeable features and elements.
Minor adverse	Slight loss or damage to existing landscape character of one (maybe more) key features and elements; and/or addition of new uncharacteristic features

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Magnitude and nature of effect	Typical criteria descriptors
	and elements.
Negligible adverse	Very minor loss, damage or alteration to existing landscape character of one or more features and elements.
No change	No noticeable alteration or improvement, temporary or permanent, of landscape character of existing features and elements.
Negligible beneficial	Very minor noticeable improvement of character by the restoration of one or more existing features and elements.
Minor beneficial	Slight improvement of landscape character by the restoration of one (maybe more) key existing features and elements; and/or the addition of new characteristic features.
Moderate beneficial	Partial or noticeable improvement of landscape character by restoration of existing features or elements; or addition of new characteristic features or elements or removal of noticeable features or elements.
Major beneficial	Large scale improvement of landscape character to features and elements; and/or addition of new distinctive features or elements, or removal of conspicuous road infrastructure elements.

Indirect landscape effects

7.3.86 In some cases, changes resulting from the Project within a LLCA may also affect another (often neighbouring) character area even though no works would take place within that character area. These effects, that is where no physical (direct) effects would take place, are known as indirect effects and have been considered in Appendix 7.9 (Application Document 6.3).

Assessment of effects on visual amenity

7.3.87 The magnitude and nature of effect on receptors/resources was determined using the criteria outlined in Table 7.6.

Table 7.6 Visual – criteria used to define magnitude and nature of visual effect (DMRB LA 107, Table 3.43)

Magnitude and nature of effect	Typical criteria descriptors
Major	The project, or a part of it, would become the dominant feature or focal point of the view.
Moderate	The project, or a part of it, would form a noticeable feature or element of the view which is readily apparent to the receptor.
Minor	The project, or a part of it, would be perceptible but not alter the overall balance of features and elements that comprise the existing view.
Negligible	Only a very small part of the project would be discernible or being at such a distance that it would form a barely noticeable feature or element of the view.
No change	No part of the project work or activity would be discernible.

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Assumptions and limitations

7.3.88 General assumptions used throughout the ES, and limitations affecting the assessments are set out in Chapter 4: EIA Methodology. Relevant assumptions and any other limitations encountered during the landscape and visual assessment are as described below. Acknowledging the assumptions and limitations identified below and in Chapter 4: EIA Methodology, the ES is considered robust and in line with relevant legislation, policy and guidance.

7.3.89 Potential direct effects on visual amenity as experienced from within the local area have been assessed using a range of agreed Representative Viewpoints. These are not intended to show every possible view towards the Project but represent the views that would be experienced by a range of different receptor types from a range of different locations within the local landscape.

7.3.90 This assessment groups residential receptors experiencing a similar significance of effect together. Generally, the approach has been to group together residential properties on the same street or in the same geographical area.

7.3.91 Figure 2.4: Environmental Masterplan (Application Document 6.2) identifies existing vegetation to be retained within the Order Limits. For the purposes of this assessment, where there is uncertainty about the likelihood of vegetation being retained, it has been assumed that it would be removed. This is considered to represent a realistic worst-case scenario. Through the detailed design process the extent of vegetation removal may be reduced to less than that assumed for assessment purposes.

7.3.92 Actual heights of established mitigation planting would vary depending on micro-climate, ground conditions and species. However, the heights of proposed planting in the design year (15 years after planting) have been assumed to be as follows, for the purposes of assessment and modelling of the photomontages in Figure 7.19 (Application Document 6.2):

a. 4.5m to 6m in height for oak and sweet chestnut

b. 6m to 10m for other trees

c. 3m for shrubs and scrub

d. 2.5m for managed hedgerows

7.3.93 The DCO application has been developed on the basis of a 2030 opening year. This assumes consent is granted in 2024. Following the DCO Grant there would be preparatory works, referred to in the draft DCO as preliminary works taking place in 2024. The main construction period for the Lower Thames Crossing would start in early 2025, with the road being open for traffic in late 2030. Construction may take approximately six years, but as with all large projects there is a level of uncertainty over the construction programme, which will be refined once contractors are appointed and as the detailed design is developed. The 2030 opening year has been selected as the basis for the assessments and is representative of the reasonable worst-case scenario. This has been used consistently across the environmental assessments, transport assessments and the economic appraisal of the Project.

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7.3.94 Where a nearby Representative Viewpoint has been identified, the assessment of visual effects on relevant visual receptors or receptor groups has been based on the visual impact assessment from the Representative Viewpoint. This assessment is supported by baseline viewpoint photography in Figure 7.17 (Application Document 6.2). However, where visual receptors are not located close to a Representative Viewpoint, the assessment of effects has been undertaken as a desk-based appraisal, supplemented by site appraisal.

7.3.95 The noise contours on Figures 12.7 and 12.8 Opening Year and Future Year Noise Change Contour (Application Document 6.2), that have been used to inform the assessment of effects on tranquillity in opening year and design year, only extend 1km from major road corridors and the Project route and do not cover the full extent of the LLCAs. However, these 1km corridors are likely to encompass the areas where the greatest effects on tranquillity would occur.

7.3.96 Exact crane heights used during construction are not known and are therefore not stated in the assessment. An assumption has been made that cranes would be visible as taller elements during construction and would therefore contribute to an adverse effect on views.

Nitrogen deposition compensation sites

7.3.97 The DCO application documents identify the locations of habitat creation sites proposed as compensation for the effects of nitrogen deposition. The design and management regimes for these locations will be developed as part of the detailed design, in accordance with the control plan documents including the outline Landscape and Ecology Management Plan (oLEMP) (Application Document 6.7), Design Principles (Application Document 7.5) and the Environmental Masterplan (ES Figure 2.4: Application Document 6.2).

7.3.98 The environmental assessment of these habitat creation areas has reflected a reasonable worst case, for both construction and operation phases. This is described in Chapter 2: Project Description. The following assumptions and limitations have been identified in the assessment of landscape and visual effects associated with the nitrogen deposition compensation sites:

a. As Project proposals in the nitrogen deposition compensation sites predominantly comprise habitat creation, the assessment of visual effects has been based solely on Representative Viewpoints. This is considered adequate to understand the significance of effects of the proposed habitat creation. Where more than one receptor type is present at a Representative Viewpoint, each receptor has been assessed in Appendix 7.10: Schedule of Visual Effects (Application Document 6.3).

b. Due to the nature of the proposals for the nitrogen deposition compensation sites, only winter photography has been captured at Representative Viewpoints N-Dep-RV-01 to 04 and N-Dep-RV-07 to 013. The winter photography represents the worst-case views, where existing vegetation is not in leaf and existing views towards the Project would be most open.

c. Due to the recent addition of the Burham nitrogen deposition compensation site, only summer photography has been captured at Representative

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Viewpoints N-Dep-RV-05 and 06. Since submission of the DCO application in 2022, the Burham nitrogen deposition compensation site has been omitted from the Project design.

d. For the purposes of assessment, it has been assumed that the average overall proportion of woodland habitat to be created on the nitrogen deposition compensation sites would be approximately 70%. However, this proportion is likely to vary across sites to respond to the individual characteristics of each location and may therefore comprise a higher or lower proportion of woodland, with the balance made up of other suitable habitats designed to provide the required compensation.

Hole Farm

7.3.99 The Project proposals at Hole Farm, overlap with a legacy project being developed by National Highways for community woodland in the same location. Further information on these proposals is provided in Chapter 2: Project Description. The timescales for delivery of the community woodland are different to those for the Project. The environmental assessments for landscape and visual have assumed a worst case scenario, before the overlapping Hole Farm compensation area planting has become established.

7.4 Baseline conditions

Existing baseline

7.4.1 The baseline conditions for the landscape and visual study area are described from south to north of the Order Limits. The following figures illustrate the landscape and visual baseline:

a. Figures 7.1 and 7.2 (Application Document 6.2) show NCAs and LLCAs
b. Figure 7.3 (Application Document 6.2) shows Environmental Lighting Zones within LLCAs
c. Figure 7.4 (Application Document 6.2) shows designated areas and PRoW
d. Figure 7.5 (Application Document 6.2) shows CPRE tranquillity mapping
e. Figure 7.6 (Application Document 6.2) shows baseline noise survey locations in relation to tranquillity
f. Figure 7.7 (Application Document 6.2) shows Green Belt areas
g. Figures 7.17 and 7.18 (Application Document 6.2) show day and night-time photographs from Representative Viewpoints

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Landscape character baseline

National landscape character

7.4.2 Natural England has divided England into 159 distinct NCAs. The following NCAs fall within the 5km area of search as shown on Figure 7.1 (Application Document 6.2):

a. NCA 119: North Downs

b. NCA 113: North Kent Plain

c. NCA 81: Greater Thames Estuary

d. NCA 111: Northern Thames Basin

7.4.3 Full details of the NCA profiles are provided in Appendix 7.4 (Application Document 6.3), while summary descriptions and key features are set out for each NCA below.

7.4.4 The NCA profile for NCA 120: Wealden Greensand (Natural England, 2014b) identified within the 1km area of search for the Burham nitrogen deposition compensation site (refer to Figure 7.1 (Application Document 6.2)) has been discounted, since it falls largely outside of the refined study area and there would not be any noteworthy temporary or permanent effects on the NCA due to the nature of the habitat creation works. Since submission of the DCO application in 2022, the Burham nitrogen deposition compensation site has been omitted from the Project design.

NCA 119: North Downs

7.4.5 The North Downs NCA comprises chalk hills dissected by valleys such as along the River Medway. Mixed farming is supported by varying soil types, with fields interspersed with woodland and chalk grassland. The escarpment forms a defining feature along the length of the NCA and panoramic views provide links with adjoining NCAs and beyond. Views across London, the Thames Estuary and to the south help provide the context and setting of this NCA. The M2/A2 skirts the northern boundary, connecting Dover and Canterbury to Chatham and to south and east London.

7.4.6 The NCA profile identifies drivers of change, which include development pressures and the fact that new development '*may be particularly visible from the escarpment*' of the North Downs, and that '*developments within the setting*' of the AONB '*create particular challenges*' (Natural England, 2014b).

7.4.7 The NCA contains nationally important biodiversity designations and heritage assets, with numerous PRoWs of recreational value. It is part of the Kent Downs AONB and the area's special qualities of tranquillity and scenic beauty underpin its designation, although these become increasingly compromised by its proximity to the A2. By virtue of its habitat diversity, recreational value, perceptual aspects and rarity, the overall value of NCA 119: North Downs is **High**.

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NCA 113: North Kent Plain

7.4.8 The North Kent Plain borders the Thames Estuary to the north and the chalk hills of the Kent Downs to the south. It largely comprises low-lying and gently undulating agricultural land, which is very productive due to the fertile loam soils. The landscape is largely open apart from occasional ancient woodland blocks, such as on higher ground within Shorne Woods Country Park, and shelterbelts within fruit-growing areas. The built environment has a strong influence on the open farmland, in particular features such as pylons which dominate in expansive vistas.

7.4.9 The NCA profile identifies drivers of change, which include the '*proposal for a Lower Thames Crossing*', which '*could have an impact on the western part of the NCA*'. Development pressures are also recognised and that '*It will be important to safeguard high quality agricultural land and make the most of green infrastructure opportunities in development planning*' (Natural England, 2014b).

7.4.10 The NCA contains the wooded skyline of Shorne Woods, which forms a small part of the wider, nationally valued Kent Downs AONB. The landscape is also valued for providing part of the northern setting to the Kent Downs AONB. The NCA has a strong association with Shorne and Higham Marshes to the north and the Essex landscape beyond. The NCA also contains numerous PRoWs of recreational value. By virtue of its recreational value and perceptual aspects, and its partial inclusion in the Kent Downs AONB, the overall value of NCA 113: North Kent Plain is **High**.

NCA 81: Greater Thames Estuary

7.4.11 The Greater Thames Estuary NCA comprises a low-lying, tranquil and remote landscape of mudflats, saltmarsh and reclaimed estuarine marsh dissected by shallow creeks and estuaries. Coastal habitats, often internationally designated, are important for birds, rare plants, invertebrates and the diverse marine wildlife. Historic military landmarks such as Coalhouse Fort are characteristic of the landscape. The rising ground of the North Kent Plain NCA to the south and the Northern Thames Basin NCA to the north provides a backdrop to the low-lying and open marshland.

7.4.12 Much of the NCA is unsettled although industrial and urban developments such as Tilbury Port are encroaching into the estuary and these are highly visible in the low-lying landscape. The NCA profile identifies drivers of change, which include '*new industrial complexes and their ancillary structures including roads …* [which] *form growing pressures on the landscape. Such developments are particularly visible within the flat landscape of the Estuary*' (Natural England, 2014b).

7.4.13 Much of the Shorne and Higham Marshes marshland area is a nationally designated Site of Special Scientific Interest (SSSI) and an internationally designated Ramsar site. The importance and value of this landscape is further evidenced by the presence of Shornemead Fort, which forms part of a much wider historic military defence along both banks of the Thames Estuary. However, with significant expansion of the urban fringe close to London, and development pressure continuing to transform the intrinsic character of the area, the NCA's value is reduced. By virtue of its habitat diversity, cultural

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associations, perceptual aspects and rarity, and the presence of detracting features, the overall value of NCA 81: Greater Thames Estuary is **Medium**.

NCA 111: Northern Thames Basin

7.4.14 The Northern Thames Basin NCA comprises rising land above the low-lying marsh of the Thames Estuary. Near the estuary, the landscape is largely arable since the improvement of the heavy London Clay soils in the 1950s and 1960s. There is an urban fringe character due to the proximity of 20th century commuter towns and the presence of parkland, golf courses and horse paddocks. Further north as the land rises towards the Brentwood Hills, the landscape is well-wooded, with areas of ancient woodland, remnant wood pasture and more recent plantations. There are tranquil areas remaining where settlement is more dispersed and broken up by arable land and semi-natural habitats.

7.4.15 The NCA profile identifies drivers of change, which include pressure from infrastructure development, noting that '*Care must be taken so that important habitats, geological, archaeological features and recreational greenspace is not destroyed in the process and the character of the area adversely affected*' (Natural England, 2014b).

7.4.16 Supporting Document 2: Landscape Change, within the NCA profile, states that '*The sub-regional priorities include promoting Green Infrastructure to improve the quality of the environment and create habitats and attract visitors through the ongoing application of the All London Green Grid more widely. Thames Chase Community Forest provides a substantial new element of Green Infrastructure in this area*' (Natural England, 2014b).

7.4.17 This landscape has a diverse range of land uses, including rough grazing on the ridge top, mineral extraction, industry, landfill and recreation, with numerous PRoWs of recreational value. Settlements include Linford, Tilbury and Chadwell St Mary, with dispersed farm buildings throughout the agricultural landscape. From the higher ground, there are extensive views out to the Thames Estuary, Kent Hills to the south and Langdon Hills. Pylons and powerlines are visually intrusive features within this character area. By virtue of its recreational value and perceptual aspects, and the presence of detracting features, the overall value of NCA 111: Northern Thames Basin is **Medium**.

Marine character (seascape)

South East Marine Character Area (MCA) 18: Thames and Medway Estuaries

7.4.18 The Project passes under the River Thames to the east of Tilbury and Gravesend within the South East MCA 18: Thames and Medway Estuaries, as shown on Figure 7.1 (Application Document 6.2). The section of MCA 18 which falls within the 5km area of search is also covered by the terrestrial NCA 81: Greater Thames Estuary. Further detail is provided in Appendix 7.4 (Application Document 6.3).

7.4.19 The River Thames is a busy shipping route to Tilbury Docks and other riverside facilities to the west and is an area of international importance for bird species and associated tracts of its semi-natural habitat on both banks. It also has strong historic associations as a transport route and for its military importance as the gateway to London.

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7.4.20 This section of MCA 18 forms the transition between the broad, extensive Thames Estuary to the east and the more enclosed and developed River Thames with its associated industry and jetties, which line both banks to the west. The River Thames is flanked on both banks by flood defences from where there are extensive 360-degree panoramic views along and across the estuary as represented in Representative Viewpoints S-38a, N-03 and N-04 (see Figure 7.17 and Figure 7.18 (Application Document 6.2)).

7.4.21 By virtue of its habitat diversity, cultural associations, perceptual aspects and rarity, and the presence of detracting features, the overall value of South East MCA 18 is **Medium**.

Kent Downs AONB

7.4.22 The Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021) sets out the special components, characteristics and qualities of the Kent Downs' natural beauty. The following special components, characteristics and qualities have been identified as those with the most relevance to this chapter:

a. **Dramatic landform and views**. '*The Kent Downs dramatic and diverse topography is based on the underlying geology…long-distance panoramas are offered, often across open countryside, estuaries and the sea from the scarp, cliffs and plateaux. The dip slope dry valleys and river valleys provide more intimate and enclosed vistas*.'

b. **Biodiversity rich habitats**. '*The unique landscapes of the Kent Downs create and contain a rich and distinctive biodiversity'. [Habitats include] 'chalk grassland and chalk scrub; woodlands (ancient woodland, veteran trees and wood pasture)…Hedgerows and trees outside woodlands are key features of the landscape…The wildlife of the farmed landscape is special…*'

c. **Farmed landscape**. '*A long-established tradition of mixed farming has helped create and maintain the natural beauty of the Kent Downs. The pastoral scenery is a particularly valued part of the landscape. Farming covers around 64% of the AONB*.'

d. **Woodland and trees**. '*The Kent Downs is one of Britain's most wooded landscapes. Broadleaf and mixed woodland cover around 23% of the Kent Downs and frame the upper slopes of the scarp, dry valleys and plateaux tops. Almost 70% of the woodlands are ancient woodland…Woodland is a much-valued component of the landscape, the sights, changing colours, smells and sounds adding to the perceptual qualities of the landscape. Individual, hedgerow, fine and ancient trees outside woodlands are a most important, characteristic and sometimes dramatic element of the landscape*.'

e. **A rich legacy of historic and cultural heritage**. '*Fields of varying shapes and sizes and ancient wood-banks and hedges, set within networks of*

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droveways and sunken lanes have produced a rich historic mosaic, which is the rural landscape of today…The diverse range of local materials used, which includes flint, chalk, ragstone, timber, brick and peg tile, contributes to the character, colour, tone and texture of the countryside.'

f. **Geology and natural resources**. '*The imposing landform and special characteristics of the Kent Downs is underpinned by its geology*.'

g. **Tranquillity and remoteness**. '*Much of the AONB provides surprisingly tranquil and remote countryside – offering dark night skies, space, beauty and peace. Simply seeing a natural landscape, hearing birdsong, seeing and hearing the sea, watching stars at night or 'bathing' in woodland are important perceptual qualities of the AONB*.'

Landscape management

7.4.23 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) identifies a series of 'protect', 'manage' and 'plan' strategies which are of relevance to the Project and the West Kent Downs LLCA sub areas:

a. '*Protect the extent of woodland and shaws, and the small-scale pastures and enclosures. In particular, important woodland and trees within the landscape, especially ancient semi-natural woodland should be protected. Veteran trees should be protected. Conserve the unity between landform and land cover*.'

b. '*Protect historic features of the landscape – these include Listed Buildings, Conservation Areas etc. (and their settings and views), but also the historic hedgerows, farms and lanes which have formed the fabric of the landscape for centuries*.'

c. '*Manage hedgerows, including alongside roads, encouraging replanting rather than repair where they have become gappy*.'

d. '*Continue to manage historic parkland, grazing wood pasture and planting replacement parkland trees so that they remain a presence in the landscape in the future*.'

e. '*Manage arable areas to encourage a diversity of pollen and seed rich habitats, hedgerow replanting and field margins to enhance the structure of the landscape and improve habitat connectivity*.'

f. '*Manage woodlands and shaws, including traditional techniques such as coppicing, to achieve age and species diversity, and to retain locally-distinctive mixes of species*.'

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7.4.24 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also identifies a series of 'protect', 'manage' and 'plan' strategies which are of relevance to the Project and the Mid Kent Downs (sub area Bredhurst) LLCA:

a. *'Protect the remote, rural quality of the landscape which typifies the Mid Kent Downs…'*

b. *'Protect undeveloped skylines, particularly in plateau areas, and along the top of the scarp above Hollingbourne Vale.'*

c. *'Protect historic buildings and structures and their settings…'*

d. *'Manage surviving hedgerows, hedgerow trees and shaws, retaining them as features within the landscape. Encourage planting of new hedgerows and shaws, linking them with woodland to create wildlife habitats and corridors. Standard trees in hedgerows should be encouraged, with ash standards affected by dieback replaced with appropriately chosen native species as necessary.'*

e. *'Manage woodland to promote age and species diversity, particularly where trees have been lost to Ash Dieback. Encourage planting of locally-distinctive species within the woodland mix where appropriate, such as beech and yew within the Bredhurst Local Character Area…Restore woodland on ridges, which is particularly apparent in the Bredhurst Local Character Area…'*

f. *'Manage grassland sites through appropriate cutting and/or grazing, encouraging reversion of arable land to species-rich grassland where appropriate. Promote wildlife corridors through arable areas, for example using field margins to connect grassland sites and the re-establishment of in field trees. Promote new hedgerows/roadside trees from existing hedge stock.'*

g. *'Consider addressing future climate change through significant new woodland planting on plateaux and ridge tops informed by landscape character and qualities.'*

7.4.25 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also identifies a series of 'protect', 'manage' and 'plan' strategies which are of relevance to the Project and the Hollingbourne Scarp and Vale (sub area Boxley Vale) LLCA:

a. *'Protect skylines at the top of the scarp…'*

b. *'Protect the rural character of the scarp…'*

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7.4.26 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also identifies a series of 'protect', 'manage' and 'plan' strategies which are of relevance to the Project and the Medway Valley (sub area The Eastern Scarp) LLCA:

a. *'Protect the attractive rural landscape of the area.'*

b. *'…Continue to promote reversion of arable land to grassland on steep scarp slopes and to reduce the intensive nature of arable farming to enhance wildlife and enable soil regeneration. Restore hedgerows which are becoming degraded…and replace/supplement infield and hedgerow trees where they have been lost.'*

c. *'Develop an aspirational plan for a large-scale natural parkland with woodland, scrub, grassland and wetlands, to help mitigate and ameliorate climate change, enhance biodiversity, and provide recreational opportunities for the expanding local population.'*

d. *'Use the recognised and valued character and qualities of the LCA to inform climate adaptation and mitigation.'*

Tranquillity and remoteness

7.4.27 National tranquillity mapping carried out by the CPRE has indicated that the Kent Downs offer important areas of relative tranquillity, and this characteristic is confirmed by its special qualities. Quotation extracts from the Kent Downs AONB Management Plan 2021–2026 relating to tranquillity are included in Appendix 7.6 (Application Document 6.3). Factors influencing relative tranquillity are also identified in the Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) in terms of landscape sensitivity and forces for change, as set out below.

Landscape sensitivity and forces for change

7.4.28 The landscape of the Kent Downs is made up of 13 main character areas in recognition of the local identity of the different areas of the AONB landscape. The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) recognises specific 'issues' relating to the West Kent Downs LLCA sub areas, noting:

a. '*There are localised impacts from main roads in the north-east corner of the West Kent Downs, and concerns that traffic and infrastructure (including lighting) could be increased following construction of the new Thames crossing…The proposed road upgrade could also result in loss of existing planting which screens both the highways infrastructure and the HS1* [High Speed 1] *line. Several pylon lines cross the area, and are particularly noticeable where they cross open areas or are viewed against the skyline. There are also lines of poles and wires along roads*.'

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b. '…*Agricultural intensification in the late twentieth century led to a loss of hedgerows and decline in landscape structure, particularly in arable areas. This also reduces the ecological connectivity of woodland, shaw and hedgerow habitats*…'

7.4.29 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also recognises specific 'issues' relating to the Mid Kent Downs (sub area Bredhurst) LLCA, noting:

a. '*Vertical features such as pylons, poles and masts are noticeable, especially in plateau areas, where they appear against the skyline*.'

b. '*Urban fringe influences are particularly noticeable on open plateau areas in the western part of the area…*'

c. '…*Motorways and main roads have localised visual, noise and light pollution impacts, especially on the peripheries of the area*…'

d. '*20th Century intensification of farming has led to ploughing of grassland, the loss of hedgerows, shaws and in-field trees in some areas, and the fragmentation of grassland and woodland habitats*.'

7.4.30 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also recognises specific 'issues' relating to the Hollingbourne Scarp and Vale (sub area Boxley Vale) LLCA, noting:

a. '*The transport corridor containing the A20, M20, Maidstone–Ashford railway line and HS1 runs along the southern edge of Hollingbourne Vale…These transport routes have localised visual and noise impacts and can be detrimental to the tranquillity of the area*…'

b. '*The landscape has suffered from intensive farming in the past, particularly loss of hedgerows and shaws, and ploughing of grassland*…'

7.4.31 The Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) also recognises specific 'issues' relating to the Medway Valley (sub area The Eastern Scarp) LLCA, noting:

a. *'The proximity of urban conurbations results in traffic impacts, light, air and noise pollution, and increased footfall which can damage habitats…'*

b. *'…There are…major roads, including the [M2,] A228 and A229 which all contribute to increased noise, air and light pollution…'*

c. *'…There are several lines of pylons…outside the AONB. These run along the valley, but also climb the scarps, and are noticeable in many views within and across the Medway valley…'*

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d. *'Fragmentation of habitats (woodlands, wetlands and grassland) is a particular concern…'*

e. *'…Past loss of hedgerows as a result of intensive farming has also damaged the landscape structure and reduced biodiversity, and fragmented the network of wildlife corridors between woodlands…'*

The setting of the Kent Downs AONB

7.4.32 The geographical extent of setting of the Kent Downs AONB is not formally defined on a map. Instead, the Kent Downs AONB Management Plan 2021–2026 defines the AONB setting as '*broadly speaking the land outside the designated area which is visible from the AONB and from which the AONB can be seen, but may be wider when affected by intrusive features beyond that*' (Kent Downs AONB Unit, 2021). This is expanded on further in the Kent Downs AONB Setting Position Statement (Kent Downs AONB Joint Advisory Committee, 2020), which states that the '*setting may be wider however, for example when affected by features such as noise and light. In some cases the setting area will be compact and close to the AONB boundary, perhaps because of natural or human made barriers or because of the nature of the proposed change. However, the setting area may be substantial for example where there is a contrast in topography between higher and lower ground*'. For relevant extracts from the Kent Downs AONB Setting Position Statement, refer to Appendix 7.6 (Application Document 6.3).

7.4.33 The Kent Downs AONB Setting Position Statement identifies locations in the setting where development and changes to the landscape may be more keenly felt, including:

a. '*The highest and most open parts of the AONB to the Greater Thames Estuary*.

b. *Land which has landscape character linked to the Kent Downs such as dry valleys*.'

7.4.34 The Kent Downs AONB Setting Position Statement also states that it is the upland scarp in the AONB that is key in terms of the setting. This is due to the scarp's prominence in views, particularly from the south, and views out from the scarp, particularly in a southerly direction. Views into the setting from the scarp are considered critical to the value of the AONB, and the '*setting of the chalk scarp has long been held to be integral to the experience of the AONB and a particularly important element of the AONB that merits protection*'.

7.4.35 For the purposes of this landscape and visual assessment, LLCAs within the study area that make up a notable proportion of views from the AONB, as well as LLCAs that have key views towards the upland, wooded areas within the AONB, have been considered part of the AONB setting. This includes LLCAs along the northern edge of the River Thames, as the Kent Downs AONB Setting Position Statement noted the Greater Thames Estuary as one of the setting locations where development and changes to the landscape may be more apparent. The distribution of LLCAs within the Kent Downs AONB and its setting is outlined respectively in Table 7.7 and Table 7.8.

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7.4.36 Within the Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021) setting is a recurrent theme and is specifically referred to in Principle SD8:

'*Ensure proposals, projects and programmes do not negatively impact on the distinctive landform, landscape character, special characteristics and qualities, the setting and views to and from the Kent Downs AONB.*'

7.4.37 In addition, setting is also referred to in Principles SD11 and SD13, which include reference to the mitigation of negative impacts on the AONB setting.

Proposed UNESCO Global Geopark

7.4.38 The Kent Downs AONB Unit have announced a new project to secure Cross-Channel UNESCO Global Geopark status for the Kent Downs AONB, with a decision anticipated in 2025. Global Geoparks are landscapes of international and geological significance that are managed to promote protection, sustainable development and education. They are run by community-led partnerships that balance the protection of natural and cultural heritage with sustainable economic development.

7.4.39 The starting point for assessment of the sensitivity of the Kent Downs AONB has been very high sensitivity due to the aspiration of achieving international Global Geopark status. The recently updated Kent Downs AONB Management Plan 2021–2026 (Kent Downs AONB Unit, 2021) states that the '*rich landscape of the Kent Downs AONB, is made up of landscape components with special characteristics and qualities which together distinguish it as a landscape of national and international importance*'. Where the value and/or susceptibility of the landscape and views has been assessed as lower than very high, for example, due to existing open and close-range views of the A2 corridor, the assessment of sensitivity has been slightly reduced accordingly.

Local Landscape Character Areas

7.4.40 With reference to the local authority character areas, LLCAs have been identified within the 2km area of search extending beyond the Order Limits as shown on Figure 7.2 (Application Document 6.2). LLCAs within the study area are summarised in Table 7.7 to Table 7.9 together with judgement on the landscape value, based on the information provided in Table 3.1 of Appendix 7.2 (Application Document 6.3). Further LLCA details are provided in Appendix 7.5 (Application Document 6.3).

7.4.41 The following LLCAs and urban areas identified within the 2km area of search have been discounted as they fall outside the refined study area:

a. Medway Landscape Character Assessment – Cliffe Woods Farmland

b. Kent Downs AONB Landscape Character Assessment Update – West Kent Downs (sub area Luddesdown)

c. Kent Downs AONB Landscape Character Assessment Update – Mid Kent Downs (sub area Nashenden Valley)

d. Maidstone Landscape Character Assessment – Bredhurst and Stockbury Downs

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e. The Landscape Assessment of Kent – Southfleet Arable Lands

f. The Landscape Assessment of Kent – Hollingbourne Vale West

g. Thurrock Landscape Capacity Study – Corringham/Stanford-le-Hope Urban Area

h. Land of The Fanns Landscape Character Assessment – Ingrebourne Valley

i. Brentwood Urban Area (not included in published landscape character assessment)

7.4.42 The following LLCAs and urban areas identified within the 2km area of search and partly within the refined study area have been discounted as it is considered there would not be any noteworthy temporary or permanent effects on the LLCA or its component features (as described below):

a. Gravesham Landscape Character Assessment – Meopham Farmlands: the Project would be over 1km away and would be in the context of the existing A2 corridor.

b. Strood Urban Area (not included in published landscape character assessment): construction works at the western tip of the LLCA would be in the context of the busy M2 corridor and largely contained by the urban edge.

c. Higham Urban Area (not included in published landscape character assessment): construction access at the edge of the LLCA would be in the context of the busy A226 Gravesend Road.

d. The Landscape Assessment of Kent – Kent Downs – Medway Western and Eastern Scarp: the LLCA falls largely outside of the refined study area and proposals are limited to habitat creation works.

e. Gravesend Urban Area (not included in published landscape character assessment): effects from the Project would be in the context of the existing A2 corridor and/or contained by buildings along the edge of the Gravesend Urban Area. Effects along the edge of Gravesend have been assessed as part of visual impact assessment.

f. Thurrock Landscape Capacity Study – Tilbury and Docks Urban Area: construction access within the LLCA would be in keeping with the industrial character, and the eastern edge of the LLCA is already influenced by overhead powerlines, industrial buildings and landfill operations.

g. Thurrock Landscape Capacity Study – Mucking Flats and Marshes: the western edge of the LLCA is largely contained by vegetation and buildings at Coalhouse Fort, with some influence from landfill operations.

h. Thurrock Landscape Capacity Study – Grays/Chadwell St Mary Urban Area: construction access within the LLCA would be along existing

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busy roads, and the Project would be largely contained by the urban edge and in the context of the existing A13 corridor.

i. Thurrock Landscape Capacity Study – West Thurrock and Grays Quarry Townscape: construction access within the LLCA would be along existing busy roads, and the Project would be largely contained by the urban edge in Grays/Chadwell St Mary and in the context of the existing A13 corridor.

j. Land of The Fanns Landscape Character Assessment – Mardyke: construction access within the LLCA would be along a road to a landfill site used by high-sided vehicles, and the eastern edge of the LLCA is already influenced by the existing A13 corridor.

k. Upminster Urban Area (not included in published landscape character assessment): construction works near the eastern edge of Upminster would be in the context of the busy M25 corridor and largely contained by the urban edge.

Table 7.7 Landscape – summary descriptions and value of LLCAs in Kent Downs AONB

Receptor (LLCA)	Description	Judgement on overall value
Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023) This landscape character assessment considered that, although the topography and the presence of woodland remains fairly consistent across the West Kent Downs LCA 1A, there are distinct sub LLCAs within it. The landscape character assessment identified three sub areas which fall within the study area. These sub areas reflect the variations in historic land ownership, settlement patterns and road corridors, which are shown on Figure 7.2 (Application Document 6.2): • West Kent Downs (sub area Cobham) • West Kent Downs (sub area Shorne) • West Kent Downs (sub area Luddesdown) The LLCA sub area Luddesdown falls within the 2km area of search but outside the Order Limits and the refined study area. This LLCA sub area is beyond the Project's physical works and its extent of visibility, and as such has been excluded from the landscape and visual assessment. Part of the Mid Kent Downs (sub area Bredhurst) falls within the study area for the Blue Bell Hill nitrogen deposition compensation site, as shown on Figure 7.2 (Application Document 6.2), with Hollingbourne Scarp and Vale (sub area Boxley Vale) and the Medway Valley (sub area The Eastern Scarp) bordering the study area.		
West Kent Downs (sub area Cobham)	The cultural integrity of the landscape is strong, with Cobham Hall Grade II* Registered Park and Garden[4] comprising a distinctive character and sense of time depth, which along with its rarity contributes to its good/very good landscape condition. Cobham Hall (which is on the site of a Roman villa) is a Grade I	The LLCA is a nationally valued accessible landscape designated as an AONB and contains nationally important

[4] On the National Heritage List for England (Historic England, 2022)

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Receptor (LLCA)	Description	Judgement on overall value
	listed Elizabethan manor house set in a parkland landscape designed by Humphry Repton. Cobham Hall Registered Park and Garden has its origins as a Medieval deer park, contains several veteran trees and contributes to the value of the LLCA. There are also extensive woodlands (containing exceptionally tall ash trees), parklands and wood pasture. Part of the park is now used as Rochester and Cobham Park Golf Club. Cobham Hall Registered Park and Garden also includes lodges and the recently restored Darnley Mausoleum. Ashenbank Wood (to the west of Cobham Hall Registered Park and Garden) contains a nationally designated SSSI and ancient woodland, a range of archaeological sites including a Bronze Age burial ground and Second World War (WWII) bunkers. Ashenbank Wood is a popular, accessible area of woodland that has recreational value. This designated landscape is of national importance and has associated nationally important ecological assets. The special components, characteristics and qualities set out in the Kent Downs AONB Management Plan 2021–2026 include tranquillity and scenic beauty, which also underpin the AONB designation, although these are increasingly compromised by the proximity of the LLCA to the A2.	biodiversity designations and heritage assets, as well as having an area of recreational value at Ashenbank Wood. By virtue of its condition, habitat diversity, cultural associations, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.
West Kent Downs (sub area Shorne)	The LLCA sub area of Shorne has been severed by the A2 road corridor from the more extensive landscape of similar character to the south. The A2 street lighting is a noticeable night-time feature, which impacts on the darker night skies within the AONB and the tranquillity on the southern edge of the LLCA. The broader landscape area, with its national designations including ancient woodland together with broader extensive woodland features, has time depth and is of good/very good landscape condition due to the intactness of the landscape away from the A2 corridor. The wooded ridge forms a discrete tract of landscape lying between the extensive built-up areas of Rochester and Gravesend. The eastern edge of Gravesend is apparent from isolated locations along the west of the LLCA. The ridge is bounded to the north by the open farmland of the Hoo Peninsula. The extent of woodland is the key distinguishing feature, in combination with the ridge landform. This significant landform feature provides an attractive backdrop in views from the north. The woodland contains a nationally designated SSSI and ancient woodland, and much is actively worked	The LLCA is a nationally valued accessible landscape designated as an AONB and contains nationally important biodiversity designations and heritage assets, as well as having an area of recreational value at Shorne Woods Country Park. By virtue of its condition, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.

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Receptor (LLCA)	Description	Judgement on overall value
	coppice. Shorne Woods are important for recreation, containing a country park and visitor centre. The woods also provide the backdrop to a hotel, set adjacent to a lake, at the south-west edge of Shorne Woods Country Park.	
West Kent Downs LCA 1A *(Overview comprising the sub areas of Shorne and Cobham)*	This is a well-wooded, enclosed and often intimate landscape. Where it opens out there are occasional long views, including striking views along valleys. With the exception of high land around Ranscombe and above the Darent Valley, there are few views out of the area, giving it quite an insular feel. It is considered to be of good/very good landscape condition due to the intactness of the landscape away from the A2 corridor. The rural and historic character of much of the area is particularly remarkable given its close proximity to urban centres. The eastern edge of Gravesend is apparent from isolated locations along the west of the LCA. Woodland is very significant in this landscape, providing an important backdrop for the rolling landform, the network of small country lanes, the scattered settlements and the extensive valley pastures. In the east, around Luddesdown, the fields are contained by thick 'walls' of woodland, and strips of remnant coppice, or shaws, occur frequently along the steeper valley sides. There are also areas of coppice woodland, including sweet chestnut and hornbeam. Much of the woodland is ancient, and the luxuriant, species-rich hedgerows add to the well-treed character of the landscape. There are also significant areas of chalk grassland, particularly on steeper slopes, although scrub encroachment and fragmentation of grassland habitats is a concern. Many of the woodland and grassland sites are designated SSSIs. The West Kent Downs LCA 1A contains areas of recreational value at Ashenbank Wood and Shorne Woods Country Park. The extent of woodland is the key distinguishing feature, in combination with the ridge landform. This significant landform feature provides an attractive backdrop in views from the north.	The LLCA is a nationally valued accessible landscape designated as an AONB and contains nationally important biodiversity designations and heritage assets, as well as having areas of recreational value at Ashenbank Wood and Shorne Woods Country Park. By virtue of its condition, habitat diversity, cultural associations, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.
Mid Kent Downs (sub area Bredhurst)	This is a mosaic landscape of arable fields interspersed with woodland blocks, including ancient woodland at Malling Wood and Frith Wood (also known as Impton/Podkin Wood). The large woodland blocks provide a backdrop to the farmland areas, containing views and providing a sense of enclosure. Field boundaries tend to be open, with managed	The LLCA is a nationally valued landscape designated as an AONB and contains nationally important ancient woodland and a

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Receptor (LLCA)	Description	Judgement on overall value
	hedgerows along lanes. Settlement is generally limited to scattered houses and farms and the village of Blue Bell Hill. Weatherboard, red brick and clay tiles are common building materials, with some houses incorporating long clay-tiled or 'cat slide' roofs. There are several PRoWs crossing the landscape, with links between the urban areas of Walderslade, Chatham and the adjoining countryside. The North Downs Way runs along the southern boundary of the LLCA. The urban edge and elements such as the M2 corridor, pylons and small-scale industry influence the landscape character locally, with isolated pockets of poorer landscape condition, although the landscape character and sense of place remain strong throughout the entire LLCA.	footpath network of recreational value, including the North Downs Way. By virtue of its condition, habitat diversity, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.
Hollingbourne Scarp and Vale (sub area Boxley Vale)	This is a landscape strongly influenced by the steep, wooded escarpment, which overlooks a wide, rolling landscape of mixed farmland, vineyards, linear tree belts and small woodland blocks. There are 'surprise' long-range views from the top of the escarpment over the wider countryside below. The escarpment contains ancient woodland such as at Frith Wood and Westfield Wood. The woodland provides a backdrop to the farmland, with its high evergreen content being particularly prominent in winter. Grassland areas exist among the woodland, with the underlying chalk apparent in some locations, such as at Boxley Warren Nature Reserve. Isolated farms and houses are linked by minor lanes, otherwise settlement is limited. The North Downs Way and Pilgrim's Way are historic east-west routes along the top and bottom of the escarpment respectively, now designated as long distance routes. The White Horse Stone is a prehistoric standing stone located along the Pilgrim's Way. Due to hedgerow removal and the presence of HS1, pylons and the M20, parts of the LLCA are of poor condition, although the escarpment provides a strong sense of place and orientation within the LLCA and in views towards it.	The LLCA is a nationally valued landscape designated as an AONB and contains nationally important biodiversity designations and heritage assets, as well as having a footpath network of recreational value. By virtue of its condition, habitat diversity, cultural associations, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.
Medway Valley (sub area The Eastern Scarp)	This is a landscape strongly influenced by the steep wooded escarpment, and defined by a pattern of intensively farmed 'scarp-foot' fields. The LLCA overlooks the wide Medway Valley, which is undergoing changes from an industrial to a post-industrial landscape. The woodland along the escarpment includes	The LLCA is a nationally valued landscape designated as an AONB and contains nationally important biodiversity designations and heritage assets, as

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Receptor (LLCA)	Description	Judgement on overall value
	Burham Down Nature Reserve and Wouldham Common, and contains beech and yew. There are some areas of ancient woodland and patches of calcareous grassland. The North Downs Way and Pilgrim's Way are historic east-west routes along the top and bottom of the escarpment respectively, now designated as long distance paths. Kit's Coty House Burial Chamber, a Neolithic scheduled monument, is located south of Blue Bell Hill near the settlement of Kit's Coty. Due to hedgerow removal and the presence of pylons and transport infrastructure, parts of the LLCA are of poor condition. However, the wooded escarpment is a peaceful landscape with a strong sense of place, despite its proximity to settlements, industry and transport infrastructure.	well as having a footpath network of recreational value. By virtue of its condition, habitat diversity, cultural associations, recreational value, perceptual aspects and rarity, the overall value of the LLCA is **High**.

Table 7.8 Landscape – summary descriptions and value of LLCAs in the setting of Kent Downs AONB and Green Belt

Receptor (LLCA)	Description	Judgement on overall value
Gravesham Landscape Character Assessment (Gravesham Borough Council, 2009) For the purposes of the landscape and visual assessment, some of the LLCA boundaries near the AONB have been redefined to take account of the intersecting and overlapping characterisation work between the Gravesham Landscape Character Assessment and the Kent Downs AONB Landscape Character Assessment Update 2020 (Kent Downs AONB Unit, revised and published 2023). The LLCA sub areas which make up the West Kent Downs LCA 1A within the AONB are based on the Kent Downs AONB characterisation work. The LLCAs within the AONB setting have also been refined as follows: • Subdividing Higham Arable Farmland LLCA into three distinct sub areas of Chalk, Thong and Gadshill. • The intimate wooded landscape between Bowesden Lane and Higham, which was formally part of Shorne Woods, is identified as Shorne Wooded Slopes.		
Higham Arable Farmland (sub area Gadshill)	The Higham Arable Farmland (sub area Gadshill) LLCA is in the Green Belt between the settlements of Higham to the north and Strood to the south. The focus of this area is the chalk downland dry valley associated with the A289 corridor near Gadshill. This area has a distinct urban fringe character because of the presence of the settlements on higher ground to the north and south. The M2 junction 1 sits at the western edge of this area. The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is lessened by road infrastructure and land uses including intense arable agriculture and polytunnels. This landscape has a strong association with the wooded slopes of Great Crabbles Wood to the north	By virtue of its condition, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	and the wooded skyline of Cobham Hall Registered Park and Garden on higher ground, beyond the M2 junction 1 within the AONB to the west. The LLCA is a locally valued landscape, which provides part of the wider north-eastern setting to the Kent Downs AONB and contains PRoWs of recreational value.	
Shorne Wooded Slopes	The Shorne Wooded Slopes LLCA is in the Green Belt between the rural settlement of Shorne Ridgeway to the west and the urban centre of Higham to the east. This is an intimate elevated landscape, which is shielded from the M2 junction 1 and A289 at its southern edge by a false cutting with dense woodland (in the adjacent West Kent Downs (sub area Shorne) LLCA). The false cutting acts as a visual and noise buffer for the lower-lying ground near Bowesden Lane. The main focus of the area is the elevated wooded ridgeline delineated by Pear Tree Lane and the associated rural ribbon development along it, which is considered to be of good landscape condition due to the intactness of the landscape and high proportion of woodland, although its condition is slightly lessened by intense arable agriculture. The land on either side of the ridgeline falls steadily away to the north and south and is heavily wooded. Great Crabbles Wood, Starmore Wood and Peartree Wood are ancient woodland and contribute to landscape value. The village of Shorne is also present within the LLCA, although it is largely enclosed by trees, which reduces its influence on the surrounding fields and woodland. Views out of the character area are restricted by woodland, which provides a strong sense of enclosure. The LLCA is a locally valued landscape, which provides the immediate setting to the Kent Downs AONB.	By virtue of its condition, habitat diversity and perceptual aspects, the overall value of the LLCA is **High**.
Higham Arable Farmland (sub area Thong)	Higham Arable Farmland (sub area Thong) LLCA is in the Green Belt east of Gravesend and north of the A2 near Thong. The focus of this area is the rural settlement of Thong, a designated conservation area with associated listed buildings. The village is situated at the edge of an open, arable, flat to gently undulating landscape that separates it from Gravesend. There are views across the open arable land to the urban edge. The village is also set against the wooded backdrop of the AONB when viewed from the west. Claylane Wood, located at the south-west	By virtue of its condition, habitat diversity, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **High**.

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Receptor (LLCA)	Description	Judgement on overall value
	corner of this area, is ancient woodland. Pylons form prominent features within this area. The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is lessened by road infrastructure, an overhead line and pylons, and intense arable agriculture. The relatively flat area of open arable fields west of Thong was once part of Gravesend Airfield, a former fighter command airfield during WWII. This landscape has a strong association with the wooded skyline of Shorne Woods within the Kent Downs AONB to the east. The LLCA is a locally valued landscape, which provides the immediate setting to the Kent Downs AONB. It contains nationally important biodiversity designations, heritage assets and PRoWs of recreational value.	
Istead Arable Farmlands	Istead Arable Farmlands LLCA is in Green Belt to the south of Gravesend and HS1. The landscape is gently undulating, allowing wide and open views out towards the urban edge of Gravesend and HS1 to the north. This is a transitional, open arable agricultural landscape, divided by tracks and minor roads. Fields are medium to large and form a regular pattern with boundaries running distinctly from north to south and east to west. Minor clumps of native woodland appear sporadically across the landscape. Pylons form prominent features within this area. Settlement is generally scattered, apart from the village of Istead Rise adjoining Wrotham Road. The LLCA is considered to be of poor landscape condition, as the intactness of the landscape is lessened by road infrastructure, overhead lines and pylons, and intense arable agriculture. The landscape to the north-east falls within the Jeskyns Community Woodland, which contains several PRoWs of recreational value. The north-eastern area of this landscape has a strong association with the wooded skyline of Shorne Woods and Ashenbank Wood within the AONB to the east. The LLCA is a locally valued accessible landscape, which forms the immediate setting of the Kent Downs AONB.	By virtue of its condition, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.
Gravesend Southern Fringe	Gravesend Southern Fringe LLCA is in the Green Belt and forms part of the linear landscape influenced by the A2, HS1 and the southern edge of Gravesend.	By virtue of its condition, recreational value and perceptual aspects, the overall

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Receptor (LLCA)	Description	Judgement on overall value
	This is a recreational landscape influenced by the surrounding built form and transport infrastructure and provides recreational links from the urban edge to the rural landscape to the south. The LLCA is considered to be of poor landscape condition, as the intactness of the landscape is lessened by the A2 and HS1 corridors and associated fragmentation, and an incoherent pattern of elements. Gravesend Southern Fringe is a locally valued landscape, which provides a buffer to the A2 corridor and is used for recreation.	value of the LLCA is **Medium**.
Higham Arable Farmland (sub area Chalk)	The Higham Arable Farmland (sub area Chalk) LLCA is in the Green Belt east of Gravesend and south of Shorne and Higham Marshes. The landscape is gently undulating and generally rises from north to south. There are extensive views within and out of the character area, towards the reclaimed marshes and River Thames in the north, across open arable land of a typically regular pattern with medium to large fields. In general, there is a lack of roads crossing the area and little tree cover. The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is lessened by overhead lines and pylons, intense arable agriculture and urban fringe land uses such as at Southern Valley Golf Club. The tower of the Grade II* listed St Mary's Church in the village of Chalk forms a local landmark. This landscape has a strong association with Shorne and Higham Marshes to the north and the Essex landscape beyond, and to the south with the wooded skyline of Shorne Woods within the AONB. The LLCA is a locally valued landscape, providing the immediate setting to the Kent Downs AONB. It contains a nationally important biodiversity designation, heritage assets and PRoWs of recreational value.	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **High**.
Shorne and Higham Marshes	Shorne and Higham Marshes are east of Gravesend and directly south of the River Thames. The area has flat topography and a lack of vegetation that results in open, wide views, including to the north bank of the River Thames. Overall, the marshes are considered to be very distinct and possess a strong sense of place and remoteness away from the urban edge. The existence of the River Thames is only noticeable when tall ships pass beyond the flood defences. The LLCA is considered to be of good landscape condition due to the intactness of the landscape and	By virtue of its condition, habitat diversity, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **High**.

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Receptor (LLCA)	Description	Judgement on overall value
	the unified pattern of landscape elements, although condition is slightly lessened by overhead lines and pylons and Milton Rifle Range. The importance and value of this landscape is further evidenced by the presence of Shornemead Fort, which forms part of a much wider historic military defence along both banks of the Thames Estuary. There is a cultural association contributing to landscape value, as the Thames Marshes provide the geographic context to Charles Dickens' Great Expectations, in which he wrote of the Thames Marshes as a '*dark flat wilderness* […] *intersected with dikes and mounds and gates, with scattered cattle feeding on it*' (Discover Gravesham, n.d.). Much of the marshland area is a nationally designated SSSI and an internationally designated Ramsar site. Some of the undesignated marshland area is presently used as Milton Rifle Range and is cordoned off from PRoWs by tall, intrusive fencing. The area is crossed by the Saxon Shore Way at the north edge of the area on the sea defence and National Cycle Network (NCN) Route 1. The disused Thames and Medway Canal traverses the south edge of the area. This landscape has a strong association with the Higham Arable Farmland LLCA to the south, set against the wooded skyline of Shorne Woods within the Kent Downs AONB.	
Thurrock Landscape Capacity Study (Thurrock Council, 2005)		
Mucking Marshes	This marshland landscape is in the Green Belt and is a grazed, flat, and low-lying area right next to the north bank of the River Thames. It is exposed and windswept. Settlement is limited to the western edge and comprises the village of East Tilbury, which provided the housing for the adjacent British Bata Shoe Company factory, and ribbon development along Princess Margaret Road. The LLCA is considered to be of poor landscape condition, as the intactness of the landscape is lessened by landfill operations. The historic Coalhouse Battery and Coalhouse Fort scheduled monuments are both located at the southern end of the character area. The latter forms an important historic Thames-side landmark and is a visitor attraction. Long-range, open and wide views are available inland towards Buckingham Hill and Langdon Hill, as well as across the River Thames to the south. The LLCA is a locally valued landscape with heritage assets and some PRoWs of recreational value.	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
Tilbury Marshes	This marshland landscape is in the Green Belt and is a large-scale, open and exposed, flat, low-lying area right next to the north bank of the River Thames. It is predominantly arable farmland but with smaller concentrations of rough grazing land and areas that have been used for landfill. The landscape pattern is defined by straight ditches and dykes creating predominantly rectilinear field shapes, particularly in the west of the character area. To the east, fields are larger with irregular boundaries. In the south of the area next to the River Thames, there are markedly different buildings and features that visually articulate the long settlement period of this landscape and its changing function. The historic Tilbury Fort scheduled monument sits at the south-western extent of the area right next to a settled and busy industrial zone. Powerlines and raised landfill sites are also notable. The LLCA is considered to be of poor landscape condition and intactness due to the prominence of overhead lines and pylons, landfill operations, industry and adjoining urban development. This area has a strong association with the Chadwell Escarpment Urban Fringe LLCA to the north with the tower of West Tilbury church forming a skyline landmark. To the south is the open, low-lying landscape of the Thames Estuary, with the wooded ridgeline within the Kent Downs AONB landscape beyond. The Two Forts Way recreational trail and footpath 146 follow the banks of the River Thames, linking Coalhouse Fort in the east to Tilbury Fort in the west, but the wider LLCA has limited access. Tilbury Fort is also a visitor attraction. The landscape therefore has some recreational value.	Notwithstanding its cultural associations and recreational value, as a result of the landscape condition and presence of detracting features, the overall value of the LLCA is **Low**.
Chadwell Escarpment Urban Fringe	This urban fringe landscape is in the Green Belt and is defined by an east-west orientated, steep-sided, south-facing escarpment indented by small dry valleys, and provides a marked contrast to the flat Tilbury Marshes to the south. This is a small-scale and intimate landscape interspersed with small copses, areas of scrub and irregular fields of rough grassland and pasture. It also includes narrow and winding lanes enclosed by hedgerows. The settlement pattern is focused on isolated individual historic farmsteads and West Tilbury (including the conservation area), where the tower of the Grade II* listed West Tilbury church (now residential) is a focal point on the skyline and a landmark in the local area. Pylons and powerlines are	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	visually intrusive features, and as a result, the LLCA is considered to be of moderate landscape condition and intactness. This area has a strong association with Tilbury Marshes to the south, the Thames Estuary and the landscape of Kent beyond. The LLCA is a locally valued landscape, which provides the backdrop to reclaimed marshland within the adjacent Thames Marshes. It also contains locally important biodiversity sites and some PRoWs of recreational value.	

Table 7.9 Landscape – summary descriptions and value of LLCAs in Green Belt and areas beyond the setting of the Kent Downs AONB

Receptor (LLCA)	Description	Judgement on overall value
The Landscape Assessment of Kent (Kent County Council, 2004)		
Dartford and Gravesend Fringe	The character area comprises fragmented pockets of land that have become isolated from the wider countryside to the south by the A2 and which are now sandwiched between the road and the extensive urban edges of Dartford and Gravesend. These pockets are influenced, to varying degrees, by urban fringe land uses and features. This area has lost most of its former agricultural uses, woodland and orchards. Varying pressures and the needs of the adjoining urban areas have resulted in a varied pattern of landcover. The A2 corridor is a common feature which forms the southern boundary. The LLCA is considered to be of very poor landscape condition and intactness due to the prominence of the A2 and urban fringe land uses and associated fragmentation.	Due to its condition, limited recreational value and presence of detracting features, the overall value of the LLCA is **Low**.
Thurrock Landscape Capacity Study (Thurrock Council, 2005)		
West Tilbury Urban Fringe	This urban fringe landscape is in the Green Belt and forms a broad, open, large-scale area of gently undulating arable farmland between Chadwell St Mary and East Tilbury. It is clearly defined by the adjacent escarpments to the north-east and south, and the urban edge of Chadwell St Mary to the west and East Tilbury to the east. The urban edges are generally abrupt with very little softening by vegetation or landform. The settlement pattern within the area comprises scattered farmsteads and farm buildings. The East Tilbury (Bata) conservation area, which was designed and built to house the workforce of the British Bata Shoe Company, sits at the eastern edge of the area. Hedgerows are common along the historic lanes and tracks which cross the area, such as Hoford Road	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	Protected Lane. The LLCA also includes part of the West Tilbury conservation area. Heavy traffic on the local road network, the Tilbury Loop railway line, pylons and powerlines are prominent and influencing features, and as a result, the LLCA is considered to be of poor landscape condition and intactness. The LLCA is a locally valued landscape, which provides the backdrop to heritage assets and contains some PRoWs of recreational value.	
Linford/ Buckingham Hill Urban Fringe	This urban fringe landscape is in the Green Belt and forms a locally distinctive area of elevated landform, due to a visually prominent, broad, flat to undulating, rounded ridge plateau. This is the principal unifying feature within this area. This landscape has a diverse range of land uses, including mixed arable and pasture fields, mineral extraction, industry, landfill and St Cleres Hall Golf Club, and is of poor landscape condition, as the intactness of the landscape is lessened by overhead lines and pylons, industrial land uses, urban influences and intense arable agriculture. Some of the landfill areas have been restored to rough grassland and scrub with informal recreational routes. The Tarmac Linford Blocks Plant is enclosed by dense woodland, screening much of the site apart from taller elements such as chimneys. Rainbow Wood is an area of ancient woodland (identified during surveys as part of the Project) abutting an operational quarry along Hoford Road. Hoford Road is a protected lane, typically sunken and lined by hedgerows and tree belts. The settlement pattern consists of the housing at Linford and dispersed farm buildings. New housing within Stanford-le-Hope borders the LLCA to the north-east. From the higher ground, there are extensive views out to the Thames Estuary and Kent Hills to the south and the Langdon Hills to the north. Pylons and powerlines are visually intrusive features within this character area. This LLCA is a locally valued landscape, which contains locally important biodiversity sites, as well as some PRoWs of recreational value.	By virtue of its condition, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.
White Croft/Orsett Heath Urban Fringe	This urban fringe landscape is in the Green Belt to the north of Grays and north-east of Chadwell St Mary. The area consists predominantly of gently undulating arable farmland strongly influenced by the presence of transport corridors and utilities infrastructure. The LLCA is considered to be of poor landscape condition, as the intactness of the landscape is lessened by major	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	transport corridors, overhead lines and pylons, urban fringe influences and intense arable agriculture. The focus of the area is the bowl-shaped farmland landscape near The Whitecroft care home. The hedgerow-lined Hornsby Lane, along with the adjoining Grade II listed Heath Place and its grounds, provides a sense of the former rural farmland landscape. The settlement pattern consists of Orsett Heath and Southfields, with farmsteads next to the occasional minor roads that cross the area. The area is influenced by the northern urban edge of Chadwell St Mary, the north-eastern urban edge of Grays and the large junction at the A13/A1089 south of Baker Street. Blackshots Nature Area sits next to the A13/A1089 junction. Pylons and powerlines are prominent features within this character area. This LLCA is a locally valued landscape, which contains locally important biodiversity sites, heritage assets and some PRoWs of recreational value.	
Land of the Fanns Landscape Character Assessment (Land of the Fanns Landscape Partnership, 2016) For the purposes of the landscape and visual assessment, the LLCA boundaries have regard to the overlapping published sources of characterisation work in this area (Thurrock Council's (2005) Landscape Capacity Study overlaps with the Land of the Fanns character assessment). Therefore, for the purposes of the Project, LLCAs to the north of the A13 have been derived from the more recent Land of the Fanns character assessment. However, the extensive Thurrock Reclaimed Fen LLCA (typically a large-scale, flat, low-lying, inland basin associated with the upper reaches of the Mardyke) has a character that is distinct from the Thames Chase Forest Centre due to the presence of woodland and its slightly elevated position. For the purposes of this assessment, the following modification has therefore been made: • Thurrock Reclaimed Fen LLCA has been subdivided into two distinct sub areas: Mardyke and Thames Chase.		
Orsett Lowland Farmland	The Orsett Lowland Farmland LLCA falls within the Greater London Green Belt but outside of the Thames Chase Community Forest area. The area is a low-lying, gently undulating fen edge landscape. The local mix of pasture and arable farmland and small woodland blocks is focused on the historic nucleated settlement of Orsett. The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is lessened by urban influences including urban fringe land uses such as horse paddocks, overhead lines and pylons, and loss of the enclosure pattern through hedgerow removal. It displays considerable time depth as a result of its long history of occupation, which is reflected in settlement pattern, enclosure pattern and historic sites. The Grade II listed Baker Street Windmill at the western edge of the settlement is a local landmark. There is a notable concentration of scheduled monuments,	By virtue of its condition, cultural associations and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	including a cropmark complex west of Orsett, a scheduled monument within the arable fields to the west of Baker Street, Iron Age enclosures at Baker Street, and Bishop Bonner's Palace north of Orsett. Orsett and Horndon-on-the-Hill are conservation areas, and the area as a whole contains a high concentration of listed buildings. There is a relationship with the open, large-scale Thurrock Reclaimed Fen LLCA, with some extensive views out to the north across it from higher ground. This landscape also had a historical relationship with the former heathland at Orsett Heath to the south, which is now separated by the A13. The A13 forms the southern boundary of this LLCA.	
Thurrock Reclaimed Fen (sub area Mardyke)	The Thurrock Reclaimed Fen (sub area Mardyke) LLCA is in the Green Belt and forms the focus of the Fanns Landscape. It is a low-lying, large-scale, flat, inland basin associated with the upper reaches of the Mardyke. To the south and east of this LLCA it is a predominantly open, sparsely settled arable landscape with a sense of place, remoteness and tranquillity and with expansive views. The lowest part of the area is Orsett Fen where the field boundaries are delineated by open ditches. The landscape is defined by rectilinear features such as former fen causeways, drainage ditches and intermittent field boundary hedgerows. This landscape contrasts with the rising wooded slopes near Brentwood to the north, and within the Langdon Hills to the east. The north-western part of this area is affected by the M25 corridor. The LLCA is of good landscape condition due to the intactness of the landscape away from the M25 corridor, including the remnant fen landscape at Orsett Fen, slightly lessened by intense arable agriculture, overhead line and pylons, and restored mineral workings. The LLCA is a locally valued landscape, which contains PRoWs of recreational value, including the Mardyke Way.	By virtue of its condition, recreational value and perceptual aspects, the overall value of the LLCA is **High**.
Thurrock Reclaimed Fen (sub area Thames Chase)	The Thurrock Reclaimed Fen (sub area Thames Chase) LLCA is in the Green Belt and forms the western edge of the Thurrock Reclaimed Fen landscape. It is focused on the Thames Chase Forest Centre, which contains areas of land valued for recreation. It has a wooded nature and is a slightly elevated area with its own identity. Other land uses include arable and pasture fields, a solar farm, Cranham Golf Club and recreational green spaces at the urban edge of Upminster. The M25 corridor is a notable feature along the east of the LLCA, particularly influencing the tranquillity of the area. The LLCA is considered to be of moderate	By virtue of its condition, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.

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Receptor (LLCA)	Description	Judgement on overall value
	landscape condition, as the intactness of the landscape is lessened by the proximity of the M25 corridor, overhead line and pylons, and urban fringe land uses.	
Belhus Lowland Quarry Farmland	The Belhus Lowland Quarry Farmland LLCA is in the Thames Chase Community Forest and Green Belt and includes the built-up urban area of South Ockendon. It is a low-lying, predominantly flat, mixed arable and pasture landscape. This area has historically been extensively quarried for aggregate with subsequent landfill, which is particularly clear in the landscape to the west of the M25 and east of South Ockendon, as evidenced by the concentration of water bodies and structural tree planting associated with the restoration of former extraction/landfill sites. The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is lessened by landfill operations (now mostly restored), intense arable agriculture and transport corridors including the M25 and Upminster to Grays railway line. There is a concentration of heritage assets within the north part of this area, including conservation areas at North Ockendon to the east and associated with the Grade II listed Cranham Hall and Harwood Hall to the west of the M25. The Grade II listed Ockendon Hall and nearby Roman barrow scheduled monument lie to the north-east of South Ockendon, which are often associated with established mature vegetation. Belhus Park Grade II Registered Park and Garden is in the south-west of the LLCA and includes mature woodland and former parkland. The LLCA is a locally valued landscape, with heritage assets, and PRoWs and country park areas of recreational value.	By virtue of its condition, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **Medium**.
Brentwood Wooded Hills	The Brentwood Wooded Hills LLCA is located within the Thames Chase Community Forest and Green Belt. It is a wooded, undulating, rural pasture and arable landscape near the M25 junction 29. To the north of the junction, the land steadily rises towards higher ground near Brentwood and the settlement of Great Warley, a designated conservation area. The upper slopes afford views out to the south and the Thurrock Reclaimed Fen. This landscape has several areas of ancient woodland, including the woodland next to the M25 at junction 29 (Codham Hall Wood). The settlement pattern is predominantly scattered residential properties, farms, hamlets and villages connected by rural lanes. The spire of the Grade I listed church St Mary the Virgin to the south of Great Warley provides a landmark feature within the surrounding farmland.	By virtue of its condition, habitat diversity, cultural associations, recreational value and perceptual aspects, the overall value of the LLCA is **High**.

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Receptor (LLCA)	Description	Judgement on overall value
	The LLCA is considered to be of moderate landscape condition, as the intactness of the landscape is interrupted by major transport corridors including the M25 and A127 and is affected by adjacent urban influences. This landscape has a strong relationship with the adjacent large-scale, low-lying Thurrock Reclaimed Fen to the south. The LLCA is a locally valued, accessible, attractive woodland landscape, which has PRoWs of recreational value.	

Susceptibility of landscape receptors to specific change

7.4.43 Appendix 7.9 (Application Document 6.3) identifies the susceptibility of landscape receptors to specific change and provides the rationale and conclusions of the ability of each landscape receptor to accommodate the Project. The susceptibility to specific change and ability to accommodate the Project is considered in conjunction with the landscape receptors' value (set out in the above Table 7.7 to Table 7.9) to inform the landscape receptors' sensitivity. Landscape sensitivity is set out in Table 7.17 to Table 7.20, Table 7.25 to Table 7.28 and in Appendix 7.9 (Application Document 6.3).

Visual amenity baseline

7.4.44 In agreement with stakeholders, 89 Representative Viewpoints (including a view north and south from S-38) have been selected to assess the visual effects of the Project. These Representative Viewpoints typify views of the range of visual receptors with potential visibility of the Project from a range of directions and distances, principally within the 2km area of search and refined study area. For ease of reference, these have been divided between south and north of the River Thames, with each ordered sequentially from the south to the north. The Representative Viewpoint numbering has been prefaced by 'S' for south or 'N' for north. Seven Representative Viewpoints outside of the refined study area have been included in the assessment at the request of stakeholders or because they typify views from elevated positions within the wider landscape, including valued views.

7.4.45 In order to assess visual effects relating to the nitrogen deposition compensation sites, a further 13 Representative Viewpoints have been included since agreement with stakeholders. The Representative Viewpoint numbering is prefaced with a reference to the 'N-Dep' nitrogen deposition compensation sites, with N-Dep-RV-01 to N-Dep-RV-09 on the south side of the River Thames and N-Dep-RV-10 to N-Dep-RV-13 on the north side. The locations, type of photography, visual sensitivity and location for all Representative Viewpoints are set out in Table 7.10.

7.4.46 Daytime (winter and summer) and night-time Representative Viewpoint photographs are presented in Figure 7.17 and Figure 7.18 (Application Document 6.2) respectively. These have been presented in accordance with the methodology agreed with stakeholders and as detailed in Appendix 7.8

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(Application Document 6.3). Baseline descriptions for each Representative Viewpoint location listed in Table 7.10 are included in Appendix 7.7 (Application Document 6.3), and locations identified on Table 7.16 (Application Document 6.2).

7.4.47 A visual effects schedule has been prepared and is presented in Appendix 7.10 (Application Document 6.3). As well as covering visual receptors associated with the Representative Viewpoints, Appendix 7.10 also includes an assessment of visual effects on all individual receptors and groups of receptors identified within the refined study area, organised by receptor type. Baseline information for each receptor is included in Appendix 7.7 (Application Document 6.3), and locations are identified on Figure 7.16 (Application Document 6.2).

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Table 7.10 Visual – Representative Viewpoints

Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
S-01	View from footpath NS150, at Gadshill on the outskirts of Higham settlement (LLCA Higham Arable Farmland (sub area Gadshill)). View centred south-south-west for recreational receptors.	D	**Moderate**	571476	170872	59.7
S-02	View from footpath NS160 located on the south-western edge of Great Crabbles Wood (LLCA Shorne Wooded Slopes). View centred south-west for recreational receptors.	D	**Moderate**	570024	170181	101.3
S-03	View from the Kent Downs AONB on footpath NS161, located north of Park Pale, east of Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south-south-east for recreational receptors.	D	**Very high**	569530	169900	86.7
S-04	View from the Kent Downs AONB on Park Pale, part of the NCN Route 177* and Darnley Trail recreational route adjacent to Park Pale overbridge. Also represents views from the end of footpath NS161 (LLCA West Kent Downs (sub area Shorne)). View centred south-east for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location; informal recreational access would continue over the bridge.*	D, N	**High**	569468	169612	74.5
S-05	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177* and	D, N	**High**	569458	169509	79

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	Darnley Trail recreational route (LLCA West Kent Downs (sub area Shorne)). View centred north-north-west for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location; informal recreational access would continue over the bridge.*					
S-05a	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177* and Darnley Trail recreational route (LLCA West Kent Downs (sub area Shorne)). View centred west for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location; informal recreational access would continue over the bridge.*	D	**High**	569461	169552	84
S-06	View from the Kent Downs AONB and the Grade I listed Darnley Mausoleum and Darnley Trail, within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred north-west for recreational receptors.	D, N	**Very high**	567633	168403	101
S-07 (& S-(CH)02)	View from the Kent Downs AONB on footpath NS182 within Rochester and Cobham Park Golf Club and Cobham Hall Grade II* Registered Park and Garden. Also represents views from footpath NS180 (LLCA West Kent Downs (sub area	D	**Very high**	568991	168783	86.

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	Cobham)). View centred north-north-west for recreational receptors.					
S-08	View from the Kent Downs AONB on footpath NS179, within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred west-north-west for recreational receptors.		**High**	569004	169516	78.7
S-09	View from the Kent Downs AONB on Park Pale/Darnley Trail/NCN Route 177*, adjacent to Brewers Wood, part of Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location.*	D	**High**	568705	169715	104.8
S-10	View from the Kent Downs AONB on a path within the Pleasure Grounds at Cobham Hall part of the Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred north-north-west for recreational receptors.	D	**Very high**	568501	169419	115.0
S-11	View from the Kent Downs AONB on footpath NS179 within Cobham Hall Grade II* Registered Park and Garden (LLCA West Kent Downs (sub area Cobham)). View centred north-north-west for recreational receptors.	D	**Very high**	568247	169475	116.4
S-12	View from the Kent Downs AONB on Brewers Road/Luddesdown Trek/NCN Route 177*, adjacent	D	**High**	568324	169733	109.6

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	to Brewers Wood/Shorne Wood (part of Shorne Woods Country Park) (LLCA West Kent Downs (sub area Shorne)). View centred south-south-west for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location.*					
S-13	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 eastbound carriageway (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors.	D, N	**High**	568282	169684	115.4
S-14	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 westbound carriageway/HS1 (LLCA West Kent Downs (sub area Shorne)). View centred north-east for recreational receptors.	D, N	**High**	568232	169606	111
S-15	View from the Kent Downs AONB on footpath NS178 located adjacent to the Halfpence Lane roundabout (LLCA West Kent Downs (sub area Cobham)). View centred north for recreational receptors.	D	**High**	567889	169543	108.3
S-16	View from the Kent Downs AONB and Randall Heath Woods, on a permissive path within Shorne Woods Country Park (LLCA West Kent Downs (sub area Shorne)). View centred south-south-west for recreational receptors.	D, N	**Very high**	567740	170495	100

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
S-17	View from the Kent Downs AONB on the NCN Route 177*/Timeball and Telegraph Trail Long Distance Path, on Thong Lane adjacent to the Inn on the Lake Hotel (LLCA West Kent Downs (sub area Shorne)). View centred south for recreational receptors. **NCN Route 177 to be diverted and not considered as part of visual receptors in the assessment at this location.*	D	**High**	567389	169920	89.9
S-18	View from the Kent Downs AONB on the HS1 green bridge and Timeball and Telegraph Trail Long Distance Path (LLCA West Kent Downs (sub area Cobham)). View centred north-west for recreational receptors.	D	**Very high**	567405	169718	99.8
S-19	View from footpath NS177, located within Jeskyns Community Woodland. Also represents views from footpath NS177A (LLCA Istead Arable Farmlands). View centred north-west for recreational receptors.	D	**High**	566719	169192	98.7
S-20	View from a recreational permissive route within Jeskyns Community Woodland (LLCA Istead Arable Farmlands). View centred north-east for recreational receptors.	D, N	**High**	566299	169841	78.5
S-20a	View from Jeskyns Community Woodland. Also represents views from northern end of footpath NS177 (LLCA Istead Arable Farmlands). View centred north-east for recreational receptors.	D	**High**	566264	169859	85.3

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
S-21	View from footpath NU29/Wealdway recreational route to the north of Ifield Court. Also represents views from footpath NU18 (LLCA Istead Arable Farmlands). View centred east-north-east for recreational receptors.	D	**High**	564649	170333	51.9
S-22	View from Watling Street on the A2 overbridge (LLCA Gravesend Southern Fringe). View centred east-south-east for users of the main road.	D	**Low**	565953	170432	82.4
S-23	View from NCN Route 177 adjacent to Claylane Wood, and the A2/Watling Street (LLCA Gravesend Southern Fringe). View centred south-east for recreational receptors.	D	**N/A** – Viewpoint not used for assessment by Project	566277	170347	92.4
S-24	View from footpath NS167 adjacent to Claylane Wood. Also represents views from bridleway NS174 (LLCA Higham Arable Farmland (sub area Thong)) looking towards the Kent Downs AONB. View centred east for recreational receptors.	D	**Moderate**	566654	170452	80.0
S-25	View from footpath NS167 at the western edge of Thong village and Thong Conservation Area (LLCA Higham Arable Farmland (sub area Thong)). View centred south-west for recreational receptors.	D, N	**Moderate**	567062	170621	76.9
S-26	View from Thong village and Thong Conservation Area (residential properties along the east of Thong Lane) (LLCA Higham Arable Farmland (sub area Thong)). View centred south-south-east for residential receptors.	D	**High**	567267	170670	85.6

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
S-27	View from footpath NS169, looking towards Shorne Woods and the Kent Downs AONB (LLCA Higham Arable Farmland (sub area Thong)). View centred east-south-east for recreational receptors.	D	**Moderate**	566715	170732	50.3
S-28 (& S-(CH)01)	View from footpath NS169 adjacent to Gravesend urban edge, looking towards Shorne Woods within the Kent Downs AONB, and St Mary Magdalene Church, Cobham (LLCA Higham Arable Farmland (sub area Thong)). View centred east-south-east for recreational receptors.	D, N	**Moderate**	566540	171019	56.4
S-29	View from the Kent Downs AONB on Shorne Ifield Road located to the north of Shorne Woods Country Park (LLCA Higham Arable Farmland (sub area Chalk)). View centred north-west for users of the local road.	D	**High**	567814	170992	94.4
S-30	View from Thong Lane in the eastern urban edge of Gravesend (Riverview Park) adjacent to the entrance of Southern Valley Golf Club (LLCA Gravesend Urban Area). View centred south-south-east for users of the local road.	D	**Moderate**	567153	171270	66.4
S-31	View from footpath NG8 located within Southern Valley Golf Club at the urban edge of Gravesend (Riverview Park) (LLCA Higham Arable Farmland (sub area Chalk)). View centred east-north-east for recreational receptors.	D, N	**Moderate**	567201	171313	66
S-32	View from elevated location along footpath NS316 located immediately west of Shorne Hill, with views to the Kent Downs AONB. Also represents views	D, N	**Moderate**	568911	171366	72

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	from footpath NS163 (LLCA Higham Arable Farmland (sub area Chalk)). View centred west for recreational receptors.					
S-33	View taken at intersection of footpaths NG7, NG8 and NG9, on northern edge of Southern Valley Golf Club (LLCA Higham Arable Farmland (sub area Chalk)). View centred north-west for recreational receptors.	D, N	**Moderate**	568011	172014	48
S-34	View from footpath NS163A located adjacent to residential properties fronting the A226 Gravesend Road (LLCA Higham Arable Farmland (sub area Chalk)). View centred south-west for recreational receptors.	D	**Moderate**	568718	172037	40.9
S-35 (& S-(CH)03a)	View from A226 Gravesend Road near Chalk (LLCA Higham Arable Farmland (sub area Chalk)). View centred south-south-east for users of the main road.	D, N	**Low**	567984	172648	22.6
S-36	View from footpath NS172 off Queen's Farm Road. Also represents views from footpath NG5 (LLCA Higham Arable Farmland (sub area Chalk)). View centred west for recreational receptors.	D	**Moderate**	569317	173201	3.7
S-37 (& S-(CH)03b)	View from NCN Route 1/footpath NG2/NG4 adjacent to former Thames and Medway Canal (LLCA Shorne and Higham Marshes). View centred south for recreational receptors.	D	**High**	568246	173853	12.7
S-38a	View from Saxon Shore Way Long Distance Path/footpath NS138 at intersection with bridleway	D, N	**High**	569148	174790	3

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	NS318 immediately adjacent to Shornemead Fort. Also represents views from footpath NG1 (LLCA Shorne and Higham Marshes). View centred north-west for recreational receptors.					
S-38b	View from Saxon Shore Way Long Distance Path/footpath NS138 at intersection with bridleway NS318 immediately adjacent to Shornemead Fort. Also represents views from footpath NG1 (LLCA Shorne and Higham Marshes). View centred south-west for recreational receptors.	D	**High**	569153	174803	2.5
S-39 (& S-(CH)04)	View from local recreational ground on area of elevated ground at Windmill Hill, within residential area of Gravesend (LLCA Gravesend Urban Area). View centred north-north-east for residential receptors.	D	**High**	564863	173326	65.6
N-Dep-RV-01	View from footpath KT/NS/176. Also represents views from footpath KT/NS/175 (LLCA Istead Arable Farmlands). View centred west-north-west for recreational receptors.	D	**Moderate**	565938	169811	77
N-Dep-RV-02	View from footpath KT/NS/168, north-west of Woodlands Lane in Shorne Ridgeway (LLCA West Kent Downs (sub area Shorne)). View centred north-west for recreational receptors.	D	**Very high**	568962	170553	89
N-Dep-RV-03	View from Swiller's Lane and residential properties along Barndale Court and Warren View, east of Shorne village (LLCA Shorne Wooded Slopes). View centred south-east for recreational and residential receptors.	D	**Moderate for users of Swiller's Lane**	569376	171127	63

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
			High for residents			
N-Dep-RV-04	View from footpath KT/NS/159. Also represents views from footpath KT/NS/156 (LLCA Shorne Wooded Slopes). View centred south-south-west for recreational receptors.	D	**Moderate**	569720	171288	52
N-Dep-RV-05	View from the junction of footpath MR26 and bridleway MR24, including the Augustine Camino Long Distance Path and Medway Valley Rail Trails – Aylesford (LLCA Medway Valley (sub area The Eastern Scarp)). View centred north for recreational receptors.	Omitted due to design changes at the Burham nitrogen deposition compensation site.				
N-Dep-RV-06	View from footpath MR601, the North Downs Way and the panoramic Ordnance Survey (OS) map viewpoint at the Bluebell Hill picnic site (LLCA Medway Valley (sub area The Eastern Scarp)). View centred south-west for recreational receptors.	Omitted due to design changes at the Burham nitrogen deposition compensation site.				
N-Dep-RV-07	View from footpath KH31 and adjacent residential properties along a farm access track off Bell Lane (LLCA Mid Kent Downs (sub area Bredhurst)). View centred south-south-west for recreational and residential receptors.	D	**Very high for users of footpath KH31** **Moderate for residents**	576150	161385	186
N-Dep-RV-08	View from footpath KH31, KH30 and the North Downs Way (LLCA Mid Kent Downs (sub area	D	**Very high**	576185	160855	191

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	Bredhurst)). View centred east-north-east for recreational receptors.					
N-Dep-RV-09	View from footpath KH646 (LLCA Mid Kent Downs (sub area Bredhurst)). View centred north-west for recreational receptors.	D	**Very high**	577481	159991	188
N-01	View from Grade I listed Tilbury Fort adjacent to NCN Route 13 and footpath 146/Thames Estuary Path/Two Forts Way (LLCA Tilbury Marshes). View centred north-north-east for recreational receptors.	D	**Very high**	565211	175312	2.8
N-02	View from Fort Road, adjacent to residential properties at Tilbury urban edge (LLCA Tilbury and Docks Urban Area). View centred east-north-east for residential receptors.	D, N	**High**	565385	176613	6.2
N-03	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13 (LLCA Tilbury Marshes). View centred north-north-east for recreational receptors.	D	**High**	566772	175496	8.0
N-04	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13 (LLCA Tilbury Marshes). View centred west-north-west for recreational receptors.	D, N	**High**	567806	175799	2.9
N-05 (& N-(CH)09)	View from Coalhouse Fort Scheduled Monument, adjacent to Two Forts Way Coastal Path/bridleway 187 and NCN Route 13, looking towards the Kent Downs AONB (LLCA Mucking Marshes). View centred south-south-west for visitors.	D	**Very high**	569093	176768	17.4

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-06	View from footpath 200 adjacent to Bowaters Farm (LLCA Tilbury Marshes). View centred south-south-east for recreational receptors.	D	**Moderate**	567539	177129	4.3
N-07	View from bridleway 58 (off Love Lane) (LLCA West Tilbury Urban Fringe). View centred west-south-west for recreational receptors.	D	**Moderate**	567722	177829	10.4
N-08	View from Low Street Lane adjacent to cluster of rural residential properties (LLCA West Tilbury Urban Fringe). View centred east for residential receptors.	D	**Moderate**	566777	177724	4.9
N-09	View from footpath 67 (off Blue Anchor Lane) adjacent to Holford Farm (LLCA West Tilbury Urban Fringe). View centred east-north-east for recreational receptors.	D, N	**Moderate**	566219	178124	26.3
N-10	View from Sandy Lane adjacent to residential properties located in Chadwell St Mary urban fringe (LLCA Grays/Chadwell St Mary Urban Area). View centred south-east for residential receptors.	D	**High**	565125	178268	28.0
N-11	View from junction of bridleway 63 and footpath 66 (off Muckingford Road) (LLCA West Tilbury Urban Fringe). View centred south-east for recreational receptors.	D	**Moderate**	566222	178572	19.0
N-12	View from residential properties in East Tilbury (off Beechcroft Avenue) (LLCA West Tilbury Urban Fringe). View centred south-west for residential receptors.	D, N	**High**	567448	178720	7.4

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-13	View from edge of public open space between Linford and East Tilbury (off Muckingford Road) (LLCA Linford/Buckingham Hill Urban Fringe). View centred south-west for users of the public open space.	D	**Moderate**	567369	179182	17.3
N-14	View from Hoford Road Protected Lane (LLCA West Tilbury Urban Fringe). View centred east for recreational receptors.	D	**Moderate**	565949	178890	25.4
N-15	View from Hoford Road Protected Lane. Also represents views from footpath FP64 (LLCA West Tilbury Urban Fringe). View centred north-north-east for recreational receptors.	D	**Moderate**	566019	179264	20.8
N-16	View from footpath 41/access track near Butts Lane (LLCA Linford/Buckingham Hill Urban Fringe). View centred south-south-west for recreational receptors.	D	**Moderate**	567992	181130	6.0
N-17	View from footpath 45 located within Orsett Golf Club (LLCA Linford/Buckingham Hill Urban Fringe). View centred south-south-east for recreational receptors.	D	**Moderate**	566306	180393	7.6
N-18	View from footpath 78 on the north-east edge of Chadwell St Mary (LLCA White Croft/Orsett Heath Urban Fringe). View centred north-north-east for recreational receptors.	D	**Moderate**	565221	179713	30.0
N-19	View from residential properties at Orsett Heath/Chadwell St Mary (LLCA White Croft/Orsett Heath Urban Fringe). Viewpoint centred north-north-east for residential receptors.	D, N	**High**	564293	179661	28.1

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-20	View from Hornsby Lane adjacent to Heath Place (Grade II listed building) (LLCA White Croft/Orsett Heath Urban Fringe). View centred west-south-west for users of the local road.	D	**Moderate**	564390	180224	61.5
N-21	View from the junction of Hornsby Lane/A1013 Stanford Road (LLCA White Croft/Orsett Heath Urban Fringe). View centred south-south-west for users of the local road.	D	**Moderate**	564385	180736	25.1
N-22	View from A1013 Stanford Road on the A1089 overbridge (northern side) (LLCA White Croft/Orsett Heath Urban Fringe). View centred north-east for users of the main road.	D	**Low**	563672	180275	34.2
N-23	View from Grays urban edge (off Long Lane) (LLCA White Croft/Orsett Heath Urban Fringe). View centred east-north-east for residential receptors.	D	**High**	562928	180292	25.4
N-24	View from residential properties along B188 Baker Street (LLCA Orsett Lowland Farmland). View looking south-south-east for residential receptors.	D	**High**	563502	181051	40.8
N-25	View from the intersection of footpath 93, footpath 96 and bridleway 206, off Mill Lane, on southern urban edge of Orsett. Also represents views from footpaths 82 and 94 (LLCA Orsett Lowland Farmland). View centred south-west for recreational receptors.	D	**Moderate**	564161	181382	38.5
N-26	View from Stifford Clays Road (LLCA Orsett Lowland Farmland). View centred north-west for users of the local road.	D	**Moderate**	563245	181401	17.6

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-27	View from bridleway 161 adjacent to junction of Green Lane/Stifford Clays Road (LLCA Orsett Lowland Farmland). View centred north-north-east for recreational receptors.	D	**Moderate**	562184	181202	20.6
N-28	View from footpath 90 at the junction of Green Lane/Fen Lane (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred south-west for recreational receptors.	D	**Moderate**	563262	182018	6.9
N-29	View from bridleway 219 located on the Mardyke Way, east of Grangewaters outdoor education centre (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred east-north-east for recreational receptors.	D	**High**	561309	181633	3.5
N-29a	View from bridleway 219 located on the Mardyke Way on Orsett Fen, open access land (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred east-north-east for recreational receptors.	D	**High**	562007	182846	10.8
N-30	View from footpath 132 near South Ockendon urban fringe (off Mollands Lane) (LLCA Belhus Lowland Quarry Farmland). View centred north-north-east for recreational receptors.	D	**Moderate**	560525	182458	15.7
N-31	View from footpath 90 on Orsett Fen (east of Hobletts residential property) (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred west for recreational receptors.	D	**Moderate**	563045	183147	5.6
N-32	View from bridleway 219 located on the Mardyke Way on Orsett Fen (LLCA Thurrock Reclaimed Fen	D	**High**	561992	183489	21.5

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
	(sub area Mardyke)). View centred north-east for recreational receptors.					
N-33	View from intersection of footpaths 89 and 90 at Bulphan Fen (off Harrow Lane). Also represents views from footpath 159 (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred south-west for recreational receptors.	D	**Moderate**	562452	184590	4.3
N-34	View from footpath 160 on the western edge of Bulphan (LLCA Thurrock Reclaimed Fen (sub area Mardyke)). View centred south-west for recreational receptors.	D	**Moderate**	563363	185699	17.8
N-35	View from footpath 136 located on Hall Lane, west of South Ockendon Hall (LLCA Belhus Lowland Quarry Farmland). View centred north-north-east for recreational receptors.	D	**Moderate**	559985	183131	24.1
N-36	View from footpath 135 off B186 North Road (LLCA Belhus Lowland Quarry Farmland). View centred south-south-east for recreational receptors.	D	**Moderate**	559626	184016	10.8
N-37	View from South Ockendon (West Road) (LLCA Belhus Lowland Quarry Farmland). View centred north for users of main road.	D	**Low**	558868	182906	18.5
N-38	View from intersection of footpaths 253 and 254 in North Ockendon Conservation Area. Also represents views from footpath 252 (LLCA Belhus Lowland Quarry Farmland). View centred south-south-west for recreational receptors.	D	**Moderate**	558887	184602	28.3

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-39	View from footpath 231 near St Mary Magdalene Church, in North Ockendon Conservation Area (LLCA Belhus Lowland Quarry Farmland). View centred west for recreational receptors.	D	**Moderate**	558690	184852	26.9
N-40	View from intersection of B186 Ockendon Road and B1421 Ockendon Road, east of North Ockendon (LLCA Belhus Lowland Quarry Farmland). View centred south-west for users of local road.	D, N	**Moderate**	559165	185339	6.2
N-41	View from adjacent to residential properties, including Cranham Place on B1421, Ockendon Road (LLCA Belhus Lowland Quarry Farmland). View centred south for residential receptors.	D	**Moderate**	558480	185160	26.7
N-42	View from permissive path within Thames Chase Forest Centre (LLCA Thurrock Reclaimed Fen (sub area Thames Chase)). View centred south-east for recreational receptors.	D	**High**	558347	186106	21.5
N-43	View from Cranham Brickfields public open space and footpath 193 on the eastern edge of Upminster (LLCA Thurrock Reclaimed Fen (sub area Thames Chase)). View centred east for recreational receptors.	D	**Moderate**	557997	187698	24.6
N-44	View from PRoW 272_110 within Thames Chase (Brentwood) (LLCA Brentwood Wooded Hills). View centred south-east for recreational receptors.	D	**Moderate**	557753	189868	84.5
N-45	View from Bird Lane to the west of Little Warley (LLCA Brentwood Wooded Hills). View centred south-west for users of the local road.	D	**Moderate**	559468	190337	67.7

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Representative Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Type of photo (daytime (D), night-time (N))	Sensitivity	Easting	Northing	Elevation (m)
N-46	View from southern edge of Thorndon Country Park (LLCA Brentwood Wooded Hills) and PRoW 272_130. View looking south-west for recreational receptors.	D	**High**	561871	189392	74.5
N-47	View from South Hill, within the Langdon Hills Country Park (LLCA Langdon Hills and Farmland[5]). View looking south-west for recreational receptors.	D	**High**	567705	186208	113.6
N-Dep-RV-10	View from footpath PRoW 272_110 west of Great Warley Street (LLCA Brentwood Wooded Hills). View centred west-south-west for recreational receptors.	D	**Moderate**	558771	189857	59
N-Dep-RV-11	View from Codham Hall Lane, west of Great Warley Street (LLCA Brentwood Wooded Hills). View centred north-west for recreational receptors.	D	**Moderate**	559266	189334	46
N-Dep-RV-12	View from footpath FP42 (LLCA Linford/Buckingham Hill Urban Fringe). View centred east-north-east for recreational receptors.	D	**Moderate**	566552	180681	22
N-Dep-RV-13	View from informal footpath within open space associated with the Maple Park housing development in Stanford-le-Hope. Also represents views from footpath FP41 (LLCA Linford/Buckingham Hill Urban Fringe). View centred west-south-west for recreational receptors.	D	**Moderate**	567425	181305	23

5 Land of the Fanns Landscape Character Assessment (The 'Land of the Fanns' Landscape Partnership Scheme, 2016)

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7.4.48 Given the breadth of the study area, the following summary of the typical views experienced within the associated LLCAs has been prepared to inform the visual baseline. This highlights sensitive receptors and summarises the visual baseline across the Project study area.

Kent Downs AONB

Mid Kent Downs (sub area Bredhurst)

7.4.49 Sensitive visual receptors within this character area include users of several PRoWs including the North Downs Way, and residents at isolated residential properties. These are represented by Representative Viewpoints N-Dep-RV-07 to N-Dep-RV-09.

7.4.50 Views from within this character area are often restricted by large woodland blocks, which soften views towards the M2 corridor and the urban edge within Chatham to the north. There are long-range views to the south-east along the top of the escarpment on the northern edge of the adjacent Hollingbourne Scarp and Vale (sub area Boxley Vale) LLCA. Views generally look out across large-scale arable fields towards woodland blocks, with some detracting features present including pylons and communications masts. There are also glimpsed views towards the M2 corridor to the north-east where tree screening belts are absent or less dense.

West Kent Downs (sub area Cobham)

7.4.51 Sensitive visual receptors within this character area include users of numerous PRoWs and recreational routes (Timeball and Telegraph Trail, Darnley Trail and Luddesdown Trek) within the Kent Downs AONB. Receptors also include residents within Cobham village, residents at and visitors to the Grade I listed Cobham Hall and recreational users of Cobham Hall Grade II* Registered Park and Garden, National Trust land, Ashenbank Wood, and Rochester and Cobham Park Golf Club. These are represented by Representative Viewpoints S-06, S-07, S-08, S-10, S-11, S-15 and S-18.

7.4.52 Views from within this character area are often contained and enclosed by dense, mature woodland, which softens the underlying undulating landform with notable elevated outcrops. The higher ground lies within the northern part of the area adjacent to HS1 and the A2 corridor. Woodland forms a unifying feature of the parkland within Cobham Hall Registered Park and Garden and is visually dominating and present as a skyline feature. The small to medium scale of this landscape and its wooded nature creates an overall sense of tranquillity and remoteness beyond the adjoining HS1 and the A2 corridor.

7.4.53 Historic features including Cobham Hall and its associated designed parkland and gardens are noteworthy features in a series of northerly views, especially from elevated positions in the south.

7.4.54 The Rochester and Cobham Park Golf Club allows for longer-range but still enclosed views within this landscape. The Darnley Mausoleum listed building present on higher landform in the south has elevated but contained views as a result of woodland cover.

7.4.55 From the northern edge of the character area, light sources along the A2 are prominent. The skyglow from these features and further light sources within Gravesend are notable in northerly views.

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West Kent Downs (sub area Shorne)

7.4.56 Sensitive visual receptors within this character area include users of numerous PRoWs, permissive routes within Shorne Woods Country Park and the Timeball and Telegraph Trail, Darnley Trail and Luddesdown Trek, a small number of residential properties on the southern edge of Shorne and the Inn on the Lake Hotel. These are represented by Representative Viewpoints S-03, S-04, S-05, S-05a, S-09, S-12, S-13, S-14, S-16 and S-17.

7.4.57 The extent of woodland (in particular Shorne and Brewers Woods) is the key distinguishing feature of views within this LLCA, seen in combination with the ridge landform. This significant landform feature provides an attractive backdrop and skylining feature in views, part of the undulating plateau landscape on the northern edge of the AONB. From the northern edge of this area, there are filtered views and glimpses out from high ground at Randall Heath, with views north out across the open arable slopes of the Higham Arable Farmland (sub area Thong) LLCA, with the Thames Estuary beyond. To the south-west, there are more densely-filtered winter views out across the south part of the Higham Arable Farmland (sub area Thong) LLCA near the A2. Traffic noise permeates much of this area, although there are pockets of lower ground within the dells, such as Fairy Steps, where traffic noise is noticeably reduced.

7.4.58 From the southern and western edge of the character area, filtered views of light sources along the A2 and within Gravesend are prominent, with features to the north-west visible within the Thames Estuary, resulting in a degree of skyglow in westerly views from within the woodland.

7.4.59 Beyond the eastern edge of Shorne Woods, the landscape gently undulates and rises from south to north, with elevated and more open views south towards the A2 corridor, with glimpses to HS1 near the overbridge at Park Pale, these features set against established vegetation within Rochester and Cobham Park Golf Club beyond.

The setting of the Kent Downs AONB and Green Belt

Higham Arable Farmland (sub area Gadshill)

7.4.60 Sensitive visual receptors within this character area include residential properties on the edge of Higham and Strood and a PRoW near Higham, which are represented by Representative Viewpoint S-01.

7.4.61 Views are across an arable field towards tree belts and residential properties along the A226 Gravesend Road, with glimpsed views beyond towards arable fields adjacent to the A289 corridor, houses in Strood and woodland at Great Crabbles Wood.

Shorne Wooded Slopes

7.4.62 Sensitive visual receptors within this character area include a number of residential properties and PRoWs, which are represented by Representative Viewpoints S-02 and N-Dep-RV-02 to 04.

7.4.63 Views from within this character area are influenced by the surrounding woodland including within Cobham Hall Registered Park and Garden, Shorne Woods Country Park, Great Crabbles Wood, Starmore Wood and Peartree Wood. It is a relatively secluded location where the landscape gently undulates.

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Arable and pasture fields feature among the woodland blocks, and the urban edge of Shorne village is apparent where not enclosed by woodland.

7.4.64 Elevated views to the south from the edge of Great Crabbles Wood are focused towards the M2 junction 1, limited by a false cutting with associated established vegetation. Light sources in the night-time environment are notable along the A2 corridor, these set against the backdrop of the AONB's dark landscape.

Higham Arable Farmland (sub area Thong)

7.4.65 Sensitive visual receptors within this character area include users of PRoWs and residents within the village of Thong, which is a conservation area. These are represented by Representative Viewpoints S-24, S-25, S-26, S-27 and S-28.

7.4.66 Thong village and the PRoWs are located between the Gravesend urban edge to the west and the steep, wooded slopes of the Kent Downs AONB to the east. The rising landform to the north-east and vegetation present along Thong Lane limit views north towards the River Thames. Views from within this character area look out across the undulating, open, arable farmland, with a backdrop of Gravesend to the west and a wooded ridgeline to the east. The land falls noticeably to the south near Claylane Wood allowing views of the A2 corridor and HS1 infrastructure, with some distant views south-west across the urban edge of Gravesend (Singlewell) towards the wooded hills at Bean and south towards Cobham where the Cobham Church tower is a notable feature. A powerline is a noticeable element in the view as it crosses to the west of Thong village.

7.4.67 To the south, light sources along the A2 are prominent, predominantly set against the dark landscape of the AONB. To the north-west and west, skyglow from light sources within Gravesend is notable.

Istead Arable Farmlands

7.4.68 Sensitive visual receptors within this character area include users of numerous PRoWs, including the Wealdway, and permissive routes within Jeskyns Community Woodland, and a small number of rural residential properties. These are represented by Representative Viewpoints S-19, S-20, S-20a, S-21 and N-Dep-RV-01.

7.4.69 This LLCA encompasses most of the well-used and popular Jeskyns Community Woodland, which extends across an undulating landscape between the HS1/A2 corridor in the north and the village of Cobham to the south. The higher ground in the community woodland (also a country park) is along an elevated ridge, which runs on a north-west to south-east axis. This allows for extensive northerly views across the park, HS1 and A2 corridor towards the Higham Arable Farmland (sub area Thong) LLCA and buildings in Thong village, set against the wooded ridgeline of the higher ground within the Kent Downs AONB to the north-east and the urban edge of Gravesend to the north-west. A powerline forms a prominent feature in these views.

7.4.70 Within the farmland landscape to the west, views look out across the surrounding undulating arable fields towards infrastructure along the HS1/A2 corridor and buildings in Gravesend to the north and the wooded higher ground within the Kent Downs AONB to the north-east and east. The tower of St

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Margaret's Church is a local landmark in the farmland landscape. Powerlines also form prominent features in these views.

7.4.71 Notable light sources in the night-time environment are visible along the A2 corridor to the north and north-east, with skyglow associated with Gravesend to the north. To the east and south-east, there are views towards the dark landscape of the AONB.

Gravesend Southern Fringe

7.4.72 Sensitive visual receptors within this character area include PRoW users crossing the existing A2 corridor or alongside, including the Wealdway, recreational users of the Cyclopark, and residents at the south-eastern edge of Gravesend within Singlewell, as represented by Representative Viewpoints S-22 and S-23.

7.4.73 The residential properties within Singlewell look out to the south and south-west towards the existing A2 and the Gravesend East junction, where moving traffic and highway infrastructure are prominent, although vegetation along the southern garden boundaries provides some filtering. Views to the east are largely screened by woodland within Claylane Wood.

7.4.74 Views from the PRoWs and Cyclopark are predominantly enclosed by existing tree belts along the A2 corridor, with some visibility of moving traffic and highway infrastructure. However, there are open views along the A2 corridor where the PRoWs cross the road.

7.4.75 Existing lighting along the A2 corridor and the urban edge of Gravesend is prominent in views, except where filtered by existing vegetation.

Gravesend Urban Area

7.4.76 Sensitive visual receptors within this character area include residential properties and community buildings along the southern and eastern edges of Gravesend, as represented by Representative Viewpoints S-28 (within the adjacent LLCA), S-30 and S-39.

7.4.77 Views from the southern edge of Gravesend are often contained by existing vegetation along the urban edge and the A2 corridor. Moving traffic along Hever Court Road and Watling Street is apparent, with glimpses of moving traffic and highway infrastructure along the A2 and at the Gravesend East junction.

7.4.78 From the eastern edge, there are views across the open arable fields towards the settlement of Thong within the Higham Arable Farmland (sub area Thong) LLCA, and the backdrop of the steeply rising wooded slopes and treed skyline within the Kent Downs AONB. The presence of a powerline is a noticeable element in most views, with distant views towards the A2 corridor.

7.4.79 Further north within Gravesend, properties along Thong Lane have north-easterly views across the adjacent Southern Valley Golf Club and undulating, open arable fields within the Higham Arable Farmland (sub area Chalk) LLCA, with the Thames Estuary and reclaimed marshland apparent in some distant views, including cranes at London Gateway Port over 10km away. Existing vegetation at Southern Valley Golf Club filters some views, in particular to the south-east, and vegetation at Cascades Leisure Centre screens some views from residential properties.

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7.4.80 Views from residential properties within Chalk are typically well contained by the adjacent built form, garden vegetation, established roadside vegetation along Castle Lane and the A226 Gravesend Road, and the undulating landform of the adjacent arable fields. There are some views across open arable fields towards residential properties and St Mary's Church along Church Lane to the east, vegetation along the A226 Gravesend Road and rising arable land to the south-east, and the reclaimed marshland and Thames Estuary to the north and north-east.

7.4.81 Occasional elevated views from within the urban area of Gravesend (such as from Representative Viewpoint S-39) look out across buildings in Gravesend towards industrial buildings along the Thames Estuary and beyond to the northern bank of the river, including the Tilbury Docks, reclaimed marshland, numerous powerlines, the Chadwell escarpment and the distant hills.

7.4.82 Existing lighting along the A2 corridor and urban edge of Gravesend is prominent in views, except where filtered by existing vegetation. The cranes at London Gateway Port are a notable distant night-time feature to the north-east. To the east and south-east, there are views towards the dark landscape of the Kent Downs AONB.

Higham Arable Farmland (sub area Chalk)

7.4.83 Sensitive visual receptors within this character area include users of numerous PRoWs, residents along Shorne Ifield Road and the western edge of Shorne, residents of scattered residential properties along the A226 Gravesend Road and within farmland, and visitors to the Grade II* listed St Mary's Church at Chalk. These are represented by Representative Viewpoints S-29, S-31, S-32, S-33, S-34, S-35 and S-36.

7.4.84 This character area is influenced by the gently undulating, open arable landscape between Gravesend and Shorne. From elevated positions, including from the northern edge of the Southern Valley Golf Club and higher ground near Shorne, there are extensive views out to the Thames Estuary where the cranes at London Gateway Port are a notable distant feature. The wooded slopes and treed skyline within the Kent Downs AONB provide the southern backdrop to views from this character area.

7.4.85 The tower of the Grade II* listed St Mary's Church at Chalk is a discernible feature in many views across the area. The A226 Gravesend Road is largely obscured by roadside vegetation, although glimpses of moving traffic are apparent. A powerline is a prominent element in the view as it crosses the open arable farmland along the eastern edge of the Southern Valley Golf Club.

7.4.86 The scattered rural farmsteads, residential properties and PRoWs to the north of the A226 Gravesend Road are located within open and low-lying farmland, typically with extensive southerly views to the rising open arable farmland north of the A226, backdropped by the wooded higher ground and skyline of the Kent Downs AONB. The Gravesend urban edge at Riverview Park forms a notable skyline feature in south-westerly views, together with the powerline as it crosses the open arable farmland along the eastern edge of the Southern Valley Golf Club.

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7.4.87 Light sources in Gravesend are prominent in night-time views, together with distant light sources visible to the north of the River Thames, including at London Gateway Port and Tilbury Docks. Views south towards the Kent Downs AONB are darker in character.

Shorne and Higham Marshes

7.4.88 Sensitive visual receptors within this character area include users of a number of PRoWs, including Saxon Shore Way along the Thames Estuary and NCN Route 1 along the former Thames and Medway Canal. These are represented by Representative Viewpoints S-37, S-38a and S-38b.

7.4.89 The network of PRoWs across the low-lying, flat land of the Shorne and Higham Marshes have extensive southerly views across the rising arable farmland within the Higham Arable Farmland (sub area Chalk) LLCA, set against the backdrop of the wooded higher ground and skyline of the Kent Downs AONB. The tower of the Grade II* listed St Mary's Church at Chalk is a discernible feature in many views across the area, and the Gravesend urban edge at Riverview Park forms a perceptible skyline feature in south-westerly views. Two powerlines form noticeable elements in views as they cross the south edge of the marshes. From Saxon Shore Way, there are expansive 360-degree views that take in the northern bank of the river, including the Tilbury Docks, reclaimed marshland, numerous powerlines, the Chadwell escarpment and the distant hills.

7.4.90 Light sources in Gravesend are prominent to the west, as well as distant light sources visible to the north of the River Thames, including at London Gateway Port and the Tilbury Docks. Views south towards the Kent Downs AONB are darker in character.

Mucking Marshes

7.4.91 Sensitive visual receptors within this character area include users of a number of PRoWs and NCN Route 13, visitors to Coalhouse Fort (a scheduled monument) and associated open space, and residential properties along Princess Margaret Road at the eastern edge of East Tilbury. These are represented by Representative Viewpoint N-05.

7.4.92 Residential properties at the southern end of Princess Margaret Road to the north of Coalhouse Fort are located on slightly elevated ground and have south-westerly views across a low-lying arable field towards the River Thames flood defence and Higham Arable Farmland (sub area Chalk) LLCA on the southern side of the River Thames, set against the backdrop of the wooded higher ground and skyline of the Kent Downs AONB. The Gravesend urban edge at Riverview Park is also a discernible skyline feature in south-westerly views. Residential properties at the northern end of Princess Margaret Road have views that are more contained by buildings and vegetation.

7.4.93 Coalhouse Fort is a privately owned scheduled monument with limited public access, although it is occasionally open to the public. The surrounding open space on the north bank of the River Thames is popular and well-used for recreation. From the flat, low-lying ground within the open space, there are extensive views along and across the Thames Estuary, with the wooded higher ground and skyline of the Kent Downs AONB visible. Two powerlines form

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perceptible elements in views as they cross the southern edge of Shorne and Higham Marshes LLCA.

7.4.94 To the west, there are views across a low-lying, arable field at the eastern edge of the Tilbury Marshes LLCA towards a scrub-covered and artificially-raised, level platform of former landfill. The array of powerlines that traverse the Tilbury Marshes LLCA and the cranes at Tilbury Docks are visible beyond. In north-westerly views beyond the powerlines, the Chadwell escarpment and the urban edge of Chadwell St Mary are visible.

7.4.95 Light sources are visible within East Tilbury, Tilbury Docks, Chadwell St Mary and Tilbury, with skyglow apparent from London Gateway Port. Light sources are also visible within Gravesend to the south-west. Views south towards the Kent Downs AONB and Shorne and Higham Marshes LLCA are darker in character.

Tilbury Marshes

7.4.96 Sensitive visual receptors within this character area include users of a small number of PRoWs, including Two Forts Way and NCN Route 13, and visitors to Tilbury Fort (which is a scheduled monument and English Heritage tourist attraction). These are represented by Representative Viewpoints N-01, N-03, N-04 and N-06.

7.4.97 There are extensive 360-degree views across and along the Thames Estuary from the northern bank of the River Thames, at the southern edge of the Tilbury Marshes LLCA. Features on the south side of the river form part of the wider view, including the rising arable farmland within the Higham Arable Farmland (sub area Chalk) LLCA, set against the backdrop of the wooded higher ground and skyline of the Kent Downs AONB. The Gravesend urban edge at Riverview Park forms a perceptible skyline feature in south-westerly views. Two powerlines form perceptible elements in views as they cross the southern edge of the Shorne and Higham Marshes LLCA.

7.4.98 From the south and east of this character area, northerly views are extensive and look out across a scrub-covered, artificially-raised, level platform of former landfill among the low-lying, flat Tilbury Marshes. In the west, the view is dominated by Tilbury Sewage Treatment Works and Tilbury Docks, including cranes and wind turbines. The array of powerlines running in a northerly direction from the former Tilbury Power Station site are backdropped by the rising landform of the Chadwell escarpment, where the tower of the Grade II* listed St James Church (now residential) in West Tilbury is visible.

7.4.99 Views from Tilbury Fort are influenced by the surrounding flat, low-lying, predominantly industrial environment at the south-west corner of the Tilbury Marshes LLCA. From the top of the fort (typically on lower ground behind the flood defence wall) there are extensive views over the flood defence across and along the Thames Estuary. Features on the south side of the river form part of the wider view, including the waterfront of Gravesend, the farmland slopes within the Higham Arable Farmland (sub area Chalk) LLCA and the backdrop of the wooded higher ground and skyline of the Kent Downs AONB. The Tilbury Sewage Treatment Works and an array of powerlines dominate easterly and north-easterly views, and the urban edge of Tilbury dominates northerly views.

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7.4.100 Night-time views are influenced by prominent light sources at Tilbury Docks, Tilbury, Chadwell St Mary and East Tilbury, which cause skyglow within this area. Light sources are also visible within Gravesend to the south. Views south-east towards the Kent Downs AONB and Shorne and Higham Marshes LLCA are darker in character.

Tilbury and Docks Urban Area

7.4.101 Sensitive visual receptors within this character area include residential properties at the eastern edge of Tilbury, as represented by Representative Viewpoint N-02. There are easterly views across Fort Road and the low-lying, flat, arable farmland of the Tilbury Marshes LLCA. The Tilbury Loop railway line crosses the area on a low embankment or at grade, and associated scrub vegetation, moving trains and overhead gantries are apparent in views. Multiple powerlines on the opposite side of the railway are the most prominent features in views. The Chadwell escarpment forms a notable feature to the north-east, with the tower of the Grade II* listed St James Church (now residential) in West Tilbury visible.

7.4.102 Night-time views across the Tilbury Marshes LLCA to the east are largely dark in character, however, lights at Tilbury Docks, Tilbury Sewage Treatment Works and within the urban area of Tilbury are prominent, causing skyglow within this area.

Chadwell Escarpment Urban Fringe

7.4.103 Sensitive visual receptors within this character area include users of a small number of PRoWs, and residents at scattered rural residential properties and farmsteads and along the southern edge of West Tilbury.

7.4.104 The rising ground within the Chadwell Escarpment Urban Fringe LLCA allows wide-ranging, south-easterly views across the low-lying, flat, arable farmland of the Tilbury Marshes LLCA. The Tilbury Loop railway line on a low embankment or at grade, and associated scrub vegetation, moving trains and overhead gantries are apparent in views. Buildings at Tilbury Sewage Treatment Works and multiple powerlines are the most prominent features in views, with infrastructure at Tilbury Docks also apparent. From the rising ground, the farmland slopes within the Higham Arable Farmland (sub area Chalk) LLCA on the south side of the River Thames are discernible, set against the wooded backdrop of the Kent Downs AONB.

7.4.105 Parts of the Tilbury Marshes LLCA to the south-east are largely dark in character, however, light sources and skyglow associated with Tilbury, Tilbury Sewage Treatment Works and Tilbury Docks, as well as light sources on the south side of the river in Gravesend, are prominent.

Green Belt/areas beyond the setting of the Kent Downs AONB

West Tilbury Urban Fringe

7.4.106 Sensitive visual receptors within this character area include users of a small number of PRoWs, and residents at scattered rural residential properties and farmsteads, along the western edge of East Tilbury/Linford, and within the northern part of the village of West Tilbury. These are represented by Representative Viewpoints N-07, N-08, N-09, N-11, N-12, N-14 and N-15.

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7.4.107 The Tilbury Loop railway line with its overhead gantries divides this predominantly undulating, arable farmland landscape on a north-east to south-west axis and forms a notable feature in views within the east of this character area. The powerlines that cross from south to north through the centre of the character area, together with the chimneys at the Tarmac Linford Blocks Plant to the north-west of Linford, are prominent visual features throughout.

7.4.108 The combination of vegetation around West Tilbury, along field boundaries, around Readmans Industrial Estate and along the Tilbury Loop railway line typically screens or filters views out across the flat, low-lying Tilbury Marshes LLCA to the south and provides for a varying degree of visual containment across the character area. However, breaks in vegetation, notably along Muckingford Road, allow for longer-range views, including towards the rising farmland slopes within the Higham Arable Farmland (sub area Chalk) LLCA on the south side of the River Thames, set against the wooded backdrop of the Kent Downs AONB.

7.4.109 To the north, the wooded, rising ground near Linford is apparent, which forms a distinct edge to the character area. Similarly, the urban edge of Chadwell St Mary forms a distinct edge to the character area to the west. Westerly views are filtered by vegetation along High House Lane on slightly higher ground, with the urban edge of Chadwell St Mary visible beyond. Three tower blocks at the northern edge of Chadwell St Mary form a visible large-scale urban landmark to the north-west.

7.4.110 Easterly views within the character area across the arable fields are often filtered but sometimes open. These views are backdropped by the residential and industrial development at the settlement edge of East Tilbury and the established vegetation at the edge of Linford. The listed industrial buildings of the former Bata factory are a notable landmark in many views.

7.4.111 Hoford Road is a protected lane with established hedgerows and hedgerow trees on either side, which runs on a south-west to north-east axis between Muckingford Road and Buckingham Hill Road. In contrast to the typically filtered but expansive views across this broad arable landscape, the sunken profile and associated vegetation results in enclosed and contained views along the lane.

7.4.112 Views east are influenced by the prominent light sources at the London Gateway Port, and views west are influenced by skyglow from the urban areas of Tilbury and Chadwell St Mary. Views south across the Tilbury Marshes LLCA and towards the Kent Downs AONB are darker in character, although light sources at Tilbury Docks and within Gravesend are apparent.

Linford/Buckingham Hill Urban Fringe

7.4.113 Sensitive visual receptors within this character area include users of PRoWs, recreational users of Orsett Golf Club, Linford public open space, and a public open space near Corringham/Stanford-le-Hope, and residents on the southern edge of Southfields, northern edge of East Tilbury and within Linford. These are represented by Representative Viewpoints N-13, N-16, N-17, N-Dep-RV-12 and N-Dep-RV-13.

7.4.114 Visual receptors on the low-lying ground at the southern edge of Linford have typically heavily filtered, oblique, south-westerly views in the direction of West Tilbury across the adjacent arable fields within West Tilbury Urban Fringe LLCA. Moving traffic along Muckingford Road is apparent, as well as isolated

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farmsteads and residential properties. Views from the edge of the Linford public open space are similar in character although less screened by intervening vegetation.

7.4.115 Woodland around the Tarmac Linford Blocks plant and tree belts and scattered trees at Orsett Golf Club contain views within the character area. There are some open views from PRoWs and the edges of Orsett Golf Club across undulating arable fields in the direction of the urban edge at Chadwell St Mary.

7.4.116 A raised area of landfill along Buckingham Hill Road is a notable feature in views from residential properties at Southfields and nearby PRoWs (represented by Representative Viewpoint N-Dep-RV-12) and from the public open space near Corringham/Stanford-le-Hope (represented by Representative Viewpoint N-Dep-RV-13). The raised landfill comprises large areas of grassland scattered with scrub blocks. Moving traffic is also apparent along the busy Buckingham Hill Road.

7.4.117 Powerlines are prominent in views across the character area, together with the chimneys at the Tarmac Linford Blocks Plant.

7.4.118 Light sources are apparent within Linford and East Tilbury, with views east influenced by prominent light sources and skyglow associated with the London Gateway Port, and views west influenced by skyglow associated with the urban areas of Tilbury and Chadwell St Mary.

White Croft/Orsett Heath Urban Fringe

7.4.119 Sensitive visual receptors within this character area include users of a large number of PRoWs, recreational users of Orsett Golf Club, and residents at scattered properties including the Grade II listed Heath Place. These are represented by Representative Viewpoints N-18, N-19, N-20, N-21, N-22 and N 23.

7.4.120 There are typically northerly views across open arable farmland within a shallow, low-lying valley. The arable farmland is backdropped to the south-east by established vegetation within Orsett Golf Club and around the Tarmac Linford Blocks Plant, to the north by vegetation along the A13 corridor, and to the west and south by the urban areas of Grays and Chadwell St Mary. Established vegetation at Heath Place forms a notable feature in the centre of the character area.

7.4.121 Views from the scattered rural properties, including the Grade II listed Heath Place, are typically filtered by established vegetation at the curtilage of the properties and along the local road network. Traffic on the A13, where it is on embankment at the northern edge of the area, is a noticeable feature in many northerly views, as are powerlines traversing the arable landscape to the south of Heath Place. The residential tower blocks at Chadwell St Mary and Grays are also prominent.

7.4.122 Light sources within the adjacent settlements and residential areas influence night-time views, including prominent light sources along the A13 corridor. As a result, there is a consistent degree of skyglow in most views.

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Grays/Chadwell St Mary Urban Area

7.4.123 Sensitive visual receptors within this character area include residential properties within Chadwell St Mary and Grays, as represented by Representative Viewpoint N-10 (within the LLCA) and Representative Viewpoints N-18, N-19 and N-23 (along the edges of the LLCA).

7.4.124 Along the northern and eastern edges of Chadwell St Mary, residential properties have northerly and easterly views across open arable farmland within the White Croft/Orsett Heath Urban Fringe and West Tilbury Urban Fringe LLCAs. The arable farmland is backdropped to the north-east and east by established vegetation within Orsett Golf Club and around the Tarmac Linford Blocks Plant, to the north by vegetation along the A13 corridor, and to the west by the urban area of Grays. Established vegetation at Heath Place forms a notable feature. There are also glimpses in some northerly views to traffic on the A13 where it crosses the landscape on embankment, beyond Hornsby Lane.

7.4.125 Residential properties located at the eastern edge of Grays (to the north and south of Long Lane) have filtered, north-easterly views across the adjacent arable farmland within White Croft/Orsett Heath Urban Fringe LLCA towards vegetation at the existing A13/A1089 junction. Traffic is apparent on embankment, viewed against the skyline and above vegetation along Long Lane and field boundary hedgerows.

7.4.126 The powerlines are prominent in views, along with the residential tower blocks at Chadwell St Mary and Grays.

7.4.127 The south-eastern edge of Chadwell St Mary is largely screened by tree belts and industrial buildings.

7.4.128 Light sources within the adjacent settlements and residential areas influence night-time views, including prominent light sources along the A13 and A1089 corridors. As a result, there is a consistent degree of skyglow in most night-time views.

Orsett Lowland Farmland

7.4.129 Sensitive visual receptors within this character area include residential properties within Baker Street and Orsett (a conservation area), users of a limited number of PRoWs and recreational users of an area of public open space on the southern edge of Orsett. These are represented by Representative Viewpoints N-24, N-25, N-26 and N-27 (southerly, westerly and northerly views).

7.4.130 Residential properties located at the southern end of Baker Street have filtered, south-westerly views towards traffic on the adjacent A13/A1089 link road through gaps in vegetation at the curtilage of the properties. Much of this vegetation comprises coniferous hedgerow. Traffic on the A13 is also seen in filtered winter views and where it is on embankment and overbridge as it passes over Baker Street.

7.4.131 On the western edge of Baker Street, residential properties have filtered and contained westerly views that focus on the Grade II listed Baker Street Windmill and its immediate environs, with some visibility of the A13 and powerlines.

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7.4.132 Northerly views towards the Thurrock Reclaimed Fen (sub area Mardyke) LLCA are filtered and contained by vegetation along the urban edge and by roadside hedgerows.

7.4.133 Views from the southern edge of Orsett look out across large arable fields towards tree belts along the A13. The tops of lighting columns are apparent above vegetation in places. Recent vegetation clearance has increased visibility of moving traffic and highway infrastructure at the Orsett Cock junction.

7.4.134 Light sources within the residential urban areas are apparent in night-time views, as well as prominent lighting along the A13 and the A1089 slip road.

Thurrock Reclaimed Fen (sub area Mardyke)

7.4.135 Sensitive visual receptors within this character area include residents at isolated rural properties and in the village of Bulphan, users of a large number of PRoWs, including the Mardyke Way and Green Lane protected lane, and recreational users of open access land at Orsett Fen. These are represented by Representative Viewpoints N-28, N-29, N-29a, N-31, N-32, N-33 and N-34.

7.4.136 Residential properties located on Fen Lane at the north-western edge of Orsett and recreational users on Green Lane and nearby PRoWs have typically extensive, long-range, north-westerly views across the open arable farmland and the wider, low-lying, large-scale, flat landscape of Thurrock Reclaimed Fen (sub area Mardyke) LLCA. These views are from the rising higher ground on the southern edge of the fen landscape. Occasional hedgerows and woodland blocks provide some filtering of views. The distant wooded landscape within the Brentwood Wooded Hills LLCA forms the backdrop to northerly-westerly views.

7.4.137 Within the flat Orsett Fen landscape, the local PRoW network and open access land have typically extensive views across a wide area. There are views across arable fields delineated by hedgerows, occasional woodland blocks or ditches, with the hedgerows and woodland blocks providing some filtering of views. Distant views are defined by higher wooded ground to the north-west within the Brentwood Wooded Hills LLCA and to the east by higher wooded ground within the Langdon Hills. To the south, views are defined by an arable ridgeline and the settlement edge within the Orsett Lowland Farmland LLCA and by vegetation along the A13 corridor. Views to the west are defined by a tree belt along the Mardyke and by a well-established pattern of structure planting, which limits views out to the Belhus Lowland Quarry Farmland LLCA and the settlement edge of South Ockendon. Powerlines form noticeable features within this arable farmland.

7.4.138 Residential properties and scattered PRoW near and within Bulphan village have generally heavily filtered views south-west, with some glimpses through to the flat arable fields within Orsett Fen.

7.4.139 At the north-western edge of the character area, views from scattered residential properties and PRoW near Clay Tye Road and St Marys Lane are influenced by the M25 corridor, particularly where the M25 crosses the landscape on embankment. The Upminster to Basildon railway line and powerlines are also noticeable features.

7.4.140 Night-time views throughout much of the character area are largely dark apart from light sources within South Ockendon and Orsett and along the A13, with some distant light sources within Chadwell St Mary and Chafford Hundred on

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the skyline to the south. Lighting along the M25 and within the urban area of Upminster influence night-time views in the north-western part of the character area.

Thurrock Reclaimed Fen (sub area Thames Chase)

7.4.141 Sensitive visual receptors within this character area include residents at isolated properties near the urban edge of Upminster and recreational users of public open space near the eastern edge of Upminster, Cranham Golf Club and Thames Chase Forest Centre. These are represented by Representative Viewpoints N-42 and N-43.

7.4.142 The Thames Chase Forest Centre comprises areas of open grassland edged by large woodland blocks. Users experience a series of sequentially changing views, ranging from contained views to framed vistas across open grassland, including towards the adjacent countryside in some cases. Elements of the M25 such as gantries and signs are present in some views.

7.4.143 Views from isolated residential properties and public open space to the north of Thames Chase Forest Centre are typically screened or filtered by tree belts and hedgerows, with some glimpsed views of the M25 on embankment.

7.4.144 Light sources within residential urban areas at Upminster are apparent in night-time views, with prominent lighting along the M25.

Belhus Lowland Quarry Farmland

7.4.145 Sensitive visual receptors within this character area include residents within North Ockendon (a conservation area), South Ockendon and at isolated rural properties and farmsteads, users of PRoWs and recreational users of Top Meadow Golf Club. These are represented by Representative Viewpoints N-30, N-35, N-36, N-37, N-38, N-39, N-40 and N-41.

7.4.146 Residents between Mollands Lane and Hall Lane in South Ockendon, and users of nearby PRoWs, have easterly views across adjacent arable farmland. Field boundary hedgerows and structure planting west of the Mardyke watercourse limit views across the open, low-lying rural landscape within the Thurrock Reclaimed Fen (sub area Mardyke) LLCA beyond, although a powerline forms a perceptible feature in many views. At the northern edge of South Ockendon, there are views across the predominantly flat arable landscape of the Belhus Lowland Quarry Farmland LLCA towards scattered woodland blocks in the midground. Views are filtered by field boundary hedgerows and vegetation along North Road. In the breaks between the woodland, there are views to the more distant rising wooded slopes of the Brentwood Wooded Hills LLCA, viewed above the skyline.

7.4.147 Residents in scattered properties along the B186 Ockendon Road have generally filtered views due to roadside vegetation, although there are glimpses through and above vegetation across the adjacent open arable fields towards scattered woodland blocks and hedgerows in the midground. There are occasional long-range views towards buildings in central London.

7.4.148 Residents in properties near the junction of the B186 Ockendon Road and B1421 Ockendon Road look out across adjacent arable fields towards buildings and vegetation in North Ockendon, which largely obscure views beyond. There

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are some glimpsed views west towards vegetation and lighting columns along the M25 corridor, and south-west towards wind turbines near South Ockendon.

7.4.149 Residential properties on the B1421 Ockendon Road and within North Ockendon, and users of nearby PRoWs, have south-westerly or westerly views across the adjacent arable field towards existing vegetation, lighting columns and highway infrastructure along the M25 corridor, with moving traffic largely screened within cutting. Views are filtered by vegetation at the curtilage of the properties and along the local road network. Users of PRoW south of North Ockendon look out across adjacent arable fields towards vegetation along the Upminster to Grays railway line and the M25 on embankment, with moving traffic and highway infrastructure visible.

7.4.150 Light sources within residential urban areas at North Ockendon and South Ockendon are apparent in night-time views, with prominent light sources, along North Road, Clay Tye Road and the M25.

Brentwood Wooded Hills

7.4.151 Sensitive visual receptors within this character area include users of PRoWs, residents at isolated properties and recreational users of Thorndon Country Park. These are represented by Representative Viewpoints N-44, N-45, N-46, N-Dep-RV-10 and N-Dep-RV-11.

7.4.152 Views within this character area are influenced by the M25 corridor, which crosses the landscape in cutting and on embankment in a north-south direction, and the M25 junction 29. There are also views towards undulating arable and pasture fields adjacent to the M25 corridor, tree screening belts along the M25 and A127, large woodland blocks among the farmland, and industrial buildings and warehouses at Codham Hall Farm. Some views from elevated ground within the Brentwood Wooded Hills LLCA are wide angled and far reaching and look out across the large-scale, low-lying Thurrock Reclaimed Fen (sub area Mardyke) LLCA to the south.

7.4.153 Views from Thorndon Country Park are largely enclosed due to woodland planting. However, there are extensive, elevated, long-range views from some parts of the country park through gaps in vegetation across the predominantly flat, low-lying arable landscape to the south and west, including within Orsett Fen. Elements in the long-range view include major road corridors, industrial buildings, powerlines, high rise buildings at Chadwell St Mary and Grays and buildings in central London.

7.4.154 Prominent light sources are visible along the M25 and A127 corridors, with lighting also apparent in the urban areas of Upminster and Brentwood. Elevated views also take in lighting within the wider landscape such as within South Ockendon, Grays, Chadwell St Mary and central London.

Langdon Hills and Farmland

7.4.155 Sensitive visual receptors within this character area include recreational users of Langdon Hills Country Park, as represented by Representative Viewpoint N-47.

7.4.156 Woodland within Langdon Hills Country Park predominantly contains views apart from glimpses through gaps in vegetation, where there are extensive, elevated, long-range views across the low-lying arable and reclaimed fen

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landscape to the west, including Orsett Fen. Elements in the long-range view include Langdon Hills Golf Country Club and Hotel, powerlines, wind turbines and buildings in central London.

7.4.157 Light sources present in elevated views include those within the urban areas of Upminster, South Ockendon and central London, and along transport corridors such as the A127, A13 and M25.

Future baseline ('Without Scheme' scenario)

7.4.158 The future baseline identifies anticipated changes to the existing baseline over time in the absence of the Project. A description of how the future baseline has been considered within the assessment is provided in Chapter 4: EIA methodology.

7.4.159 Anticipated changes in the existing landscape and visual baseline are described below. Due to the uncertain nature of many of the anticipated changes, the assessment of landscape and visual effects in this chapter has been undertaken against the existing baseline situation. However, the anticipated future baseline provides an indication of how the landscape character and visual amenity in the vicinity of the Project are likely to be affected by other developments between now (the current baseline conditions) and the design year of the Project.

Climate change

7.4.160 Climate change is likely to result in increased extreme weather events within the United Kingdom, including periods of both increased and reduced precipitation. This is likely to place further stress on vegetation within the landscape which forms part of the existing baseline. However, it is not yet known how changing weather will affect vegetation. Climate is considered within Chapter 15: Climate.

Potential changes to the future baseline as a result of ash dieback *Hymenoscyphus fraxineus*

7.4.161 Following a recommendation by the Kent Downs AONB Unit, further analysis has been undertaken with regard to the prevalence of ash *Fraxinus excelsior* trees within the Kent Downs AONB near the Project, to inform the likely implications of ash dieback *Hymenoscyphus fraxineus*. Analysis has been undertaken using the findings from the National Vegetation Classification (NVC) survey and the arboricultural survey. The NVC survey results are presented in Appendix 8.2: Plants and Habitats (Application Document 6.3) and the arboricultural survey is in Appendix 7.12 (Application Document 6.3). For the purposes of future baseline, the limitation with both studies is that their extent has been focused on the Order Limits and/or vegetation directly or likely to be affected by the Project.

7.4.162 The arboricultural survey identifies that ash is commonplace throughout the A2 corridor and within the area of the Kent Downs AONB that would be impacted by the Project.

7.4.163 The NVC studies undertaken at Brewers Wood, Shorne Woods, Ashenbank Wood and Claylane Wood (within and next to the A2 corridor and within the AONB and its setting) have recorded the relative abundance of each species.

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7.4.164 The NVC survey suggests that the prevalence of ash species is rare in Brewers Wood and Shorne Wood, comprising several individuals in the canopy layers and a few individuals in the ground layers. Ash species represent less than 4% of trees within these woodlands.

7.4.165 The NVC survey suggests that the prevalence of ash species is occasional to rare in Ashenbank Wood, comprising several individuals in the canopy layer, and several to many individuals in the ground layer. Ash species represent less than 4% of the woodland's trees.

7.4.166 The NVC survey suggests that the prevalence of ash species is frequent to occasional in Claylane Wood, representing between 4% and 33% of the woodland trees, with several individuals present in the canopy layer and many individuals in the ground layer.

7.4.167 The likely effects of ash dieback within the study area are unknown. However, the Woodland Trust (2021) website states that *'Ash dieback will kill around 80% of ash trees across the UK*'.

7.4.168 In response to ash dieback and on the basis that ash is the most common tree species in the Kent Downs AONB, the Kent Downs AONB Unit has partnered with organisations such as Kent County Council, the Woodland Trust and the Forestry Commission to form the Ash Project, in order to disseminate information about the disease locally and record this major change to the landscape.

7.4.169 The Ash Project website (Ash Project, 2022) states that the disease, caused by the fungal pathogen *Hymenoscyphus fraxineus* and also known as '*Chalara dieback of ash*', is characterised by leaf loss and crown dieback in infected trees. The Ash Project states that '*Ash dieback is widely accepted to be untreatable and could see the demise of 90-98% of these trees over the next decade*.'

7.4.170 The Forestry Commission, on its webpage regarding the disease, states that the disease *'has the potential to cause significant damage to the UK's ash population*', and that '*Experience in continental Europe, which is now being seen replicated in the UK, indicates that it can kill young and coppiced ash trees quite quickly. However, older trees can resist it for some time until prolonged exposure, or another pest or pathogen, such as Armillaria (honey fungus), attacking them in their weakened state eventually causes them to succumb.*' (Forestry Commission, 2022).

7.4.171 With regards to areas where replanting is necessary, a Joint Nature Conservation Committee (2014) report on 'The Potential Ecological Impact of Ash Dieback' recommended a palette of 11 tree species whose planting in place of ash could support approximately three-quarters of the other flora and fauna species currently supported by ash. The species are field maple, birch, hawthorn, aspen, oak, small leaved lime, sycamore, hazel, beech, cherry and goat willow.

7.4.172 Ash is common but not generally prevalent within the immediate vicinity of the Project. Therefore, while likely to be perceptible overall and more noticeable within certain locations, it is not considered that ash dieback would affect the overall wooded nature and characteristics of the Kent Downs AONB in the immediate vicinity of the Project. It is believed that the overall composition of the woodland groups and their screening/containing benefit would be retained.

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7.4.173 The assessment in this chapter considers the existing baseline situation, given that it is not yet known what the full effects of ash dieback will be in Britain.

Growth of young woodland plantations

7.4.174 The visual baseline is likely to change in locations where establishing woodland plantations (including those at Jeskyns Community Woodland and Thames Chase Forest Centre) are still maturing. This would further restrict visibility in the local landscape at these locations.

Planning Allocations and Applications

7.4.175 There are a number of planned developments and third-party development projects along the Project route that have the potential to alter the landscape and visual baseline in the absence of the Project. A full list of committed developments has been produced for Chapter 16: Cumulative Effects Assessment, with those of most relevance to the landscape and visual baseline summarised below in a broadly south to north direction along the Project route.

7.4.176 Sites have been allocated for mixed use and residential development to the east and west of Three Crutches near M2 junction 1, at Cascades Leisure Centre and at Canal Road/ Norfolk Road in Gravesend, by Gravesham Borough Council. These developments have the potential to change the local landscape character and visual amenity by either replacing existing agricultural land with new buildings or by replacing existing buildings with new development.

7.4.177 High-rise mixed use and residential developments proposed on the Gravesend waterfront such as Albion Waterside Canal Basin, The Charter and Clifton Slipways have the potential to change local landscape character and visual amenity along the south of the River Thames by increasing the number of high-rise buildings.

7.4.178 There are several developments proposed in the Tilbury area that have the potential to further industrialise the former marshland to the north of the River Thames, thereby changing the local landscape character and visual amenity. These include the proposed high voltage network reinforcement between Norwich, Bramford and Tilbury (East Anglia Green Energy Enablement), Tilbury Link Road, Thames Freeport, Thurrock Flexible Generation Plant and landfill operations to raise ground levels.

7.4.179 Sites have also been allocated for mixed use or residential development at East Tilbury, Chadwell St Mary, Orsett and Baker Street, and South Ockendon, by Thurrock Council. These developments have the potential to change the local landscape character and visual amenity by replacing existing agricultural land with new buildings at the settlement edges.

7.4.180 The Medebridge, Bulphan and Ockendon solar farms have the potential to notably change the large-scale, flat and sparsely settled landscape of the Thurrock Reclaimed Fen and the associated expansive views.

7.4.181 Proposed employment development at Codham Hall Farm and Brentwood Enterprise Park near M25 junction 29 have the potential to change the local landscape character and visual amenity, although in the context of existing employment development.

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7.5 Project design and mitigation

7.5.1 Environmental considerations have influenced the Project throughout the design development process, from early route options assessment through to refinement of the Project design. An iterative process has facilitated design updates and improvements, informed by environmental assessment and input from the Project design teams, stakeholders and public consultation.

7.5.2 The Project as applied for includes a range of environmental commitments. Commitments of relevance to landscape and visual are set out in this section under the following categories:

a. Embedded mitigation: measures that form part of the engineering design, developed through the iterative design process summarised above.

b. Good practice: standard approaches and actions commonly used on infrastructure development projects to avoid or reduce environmental impacts, typically applicable across the whole Project.

c. Essential mitigation: any additional Project-specific measures needed to avoid, reduce or offset potential impacts that could otherwise result in effects considered to be significant in the context of the EIA Regulations. Essential mitigation has been identified by environmental topic specialists, taking into account the embedded and good practice mitigation.

7.5.3 Embedded mitigation is included within the Design Principles (Application Document 7.5) or as features presented on Figure 2.4: Environmental Masterplan (Application Document 6.2). Design principles relevant to mitigation of effects on landscape and visual are described below, each with an alpha-numerical reference code (e.g. LSP.XX). Good practice and essential mitigation are included in the Register of Environmental Actions and Commitments (REAC). The REAC forms part of Appendix 2.2: Code of Construction Practice (CoCP) (Application Document 6.3). Each entry in the REAC has an alpha-numerical reference code (e.g. LV0XX) to provide cross reference to the secured commitment. Relevant extracts to safeguard the landscape and visual amenity are provided in Table 7.15 to Table 7.19 below.

7.5.4 The Design Principles, Environmental Masterplan, CoCP and REAC, all form part of the Project control plan. The control plan is the framework for mitigating, monitoring and controlling the effects of the Project. It is made up of a series of ‘control documents’ which present the mitigation measures identified in the application that must be implemented during design, construction and operation to reduce the adverse effects of the Project. Further explanation of the control plan and the documents which it comprises is provided in the Introduction to the Application (Application Document 1.3).

7.5.5 Enhancement measures have been directly incorporated into the Project as part of the application of ‘good design’ principles. Enhancements are measures that are considered to be over and above any measures to avoid, reduce or remediate adverse impacts of the Project. Relevant beneficial effects arising as a consequence of this good design process are provided in Section 7.6.

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7.5.6 A planting strategy for the Project has been set out in the Design Principles (Application Document 7.5). This describes, where practicable, the use of trees, shrub and grassland species that would not only provide landscape mitigation (screening and integration) functions, but also offer wider biodiversity benefits and adaptability against the backdrop of climate change. As such, the use of some non-native species is included, with the overall objective being resilience through diversity.

7.5.7 Figure 2.4: Environmental Masterplan (Application Document 6.2) identifies the spatial extent and location of the environmental elements proposed to help mitigate and integrate the Project into the surrounding landscape, including proposed planting plots. The Environmental Masterplan also identifies the environmental function of each proposed planting plot. The Design Principles (Application Document 7.5) describe what has shaped the design and provide a commitment for the delivery of mitigation measures during the detailed design of the Project if a DCO is granted. The Design Principles also contain an indicative planting palette for the relevant landscape elements that form part of the Environmental Masterplan.

7.5.8 The Environmental Masterplan should be read in conjunction with the oLEMP (Application Document 6.7), which is one of a suite of documents that supplements the ES. The oLEMP outlines the proposed long-term management of the landscape and ecological elements of the Project. It focuses on the management requirements for the permanently acquired land parcels within the Order Limits, to ensure that the specific landscape and ecological mitigation functions of these land parcels are achieved.

7.5.9 The design of the proposed mitigation measures shown in the Environmental Masterplan would be further refined through detailed design if a DCO is granted for the Project. The detailed landscape design, which would be submitted to the Secretary of State following consultation with the local planning authority, would include planting plans, schedules and a specification developed in accordance with the Manual of Contract Documents for Highway Works (MCDHW) Volume 1, Series 3000 Landscape and Ecology (Highways Agency, 2001).

7.5.10 During detailed design, a detailed Landscape and Ecology Management Plan (LEMP) would be developed from the oLEMP (Application Document 6.7). In accordance with Requirement 5 of the draft DCO (Application Document 3.1), the LEMP would build on the principles outlined in the Design Principles, CoCP and REAC. The LEMP would include information on long-term operational management of the landscape and ecological resource associated with the Project and shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). It would also describe the long-term management of ecological habitats required to achieve biodiversity net gain units (refer to Chapter 8: Terrestrial Biodiversity for further information). The LEMP would be guided by LD 117 Landscape Design (Highways England, 2020c) and MCDHW Volume 1, Series 3000 Landscape and Ecology (Highways Agency, 2001).

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Embedded mitigation

Construction phase

7.5.11 Construction phase embedded mitigation of relevance to this landscape and visual chapter is as follows:

a. Reduce permanent land acquisition by returning construction working areas to landowners wherever practicable and not required for environmental mitigation.

b. Reduce loss of existing vegetation throughout the Project wherever practicable. Commitment to the protection and retention of vegetation shown to be retained on Figure 2.4: Environmental Masterplan (Application Document 6.2) to aid visual screening and landscape integration of construction activity and the operational Project. (Retained vegetation shown on the Environmental Masterplan takes account of vegetation removal required to accommodate the Project and associated utility works.)

c. Reinstatement of land utilised during construction to its original use as far as technically practicable in consultation with the landowner where required, as referenced in Clause LSP.05 of the Design Principles (Application Document 7.5).

Operational phase

7.5.12 Operational phase embedded mitigation of relevance to this landscape and visual chapter is set out in Table 7.11 for each section of the Project. The text in the table is based on extracts from the Design Principles (Application Document 7.5).

Table 7.11 Landscape and visual embedded mitigation – operation

Location	Mitigation measures	Design Principle reference(s)/ drawing reference
Project-wide		
	'*All existing vegetation shall be retained as far as reasonably practicable in order to:* • *…Preserve its function as a natural screen to the works.* • *Preserve the natural enclosed woodland settings for existing adjacent properties*…'	LSP.01
	'*The planting strategy for the Project including species selection and planting pattern shall be developed with consideration of context, of local provenance, and be appropriate to its locality*…'	LSP.02
	'*The detailed design shall use planting to soften the edge of the earthworks and integrate the Project as defined in the Environmental Masterplan (Application Document*	LSP.03

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
	6.2, Figure 2.4). The earthworks shall be graded into the wider landscape as appropriate for its context and shall respect the local topography and landscape character where reasonably practicable…'	
	'In order to minimise the visual impact of the Project, the landscaping design shall include planting to integrate the road into the adjacent landscape as defined within the Environmental Masterplan (Application Document 6.2, Figure 2.4).'	LSP.04
	'*To protect views across historic landscape and topography, the new landscape design shall take account of local landscape character, respect historic features and reference historic land use, landforms, field patterns and boundaries.*'	LSP.07
	'*All false cuttings shall have…where reasonably practicable, slackened outward-facing slopes to allow for agriculture and/or planting as appropriate to the surrounding landscape character and use. Any fences or other structures required will be set down from the top of the slopes to reduce visibility from the wider landscape with the exception of acoustic barriers*… *Appropriate soft landscaping shall be planted to integrate and soften the interface of the earthworks*… *Outward-facing slopes shall be slackened to a minimum of 1:4 gradient to allow for woodland planting in suitable locations, as defined within the Environmental Masterplan (Application Document 6.2, Figure 2.4). Exceptions are where land has been identified as to be returned to agriculture, where slopes shall be slackened to a minimum 1:10 gradient*…'	LSP.09
	'*Given the complexity of the junctions at the A2/M2/A122, A13 and M25, the landscape shall primarily be woodland planting*…'	LSP.10
	'*To protect the historic character of the landscape, provide additional screening and enhance biodiversity, reinstated field boundaries shall be demarcated with hedgerows*…'	LSP.13
	'*Where appropriate, and in keeping with existing landscape character, hedgerow planting shall be planted at the toe of engineered earthworks or beyond proposed Project assets such as drainage ditches and swales. This will soften the appearance of the engineered earthworks into the existing landscape, provide a boundary to highway assets and integrate any fencing required at the highway's boundary*…'	LSP.14
	Infiltration basins: '…*Planting shall be provided to soften edges where this is appropriate to the context*.'	LSP.17

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
	'*To prevent views of the edges of the exposed chalk cutting across the landscape and create valuable habitat, the top of the cuttings in chalk shall be graded back to allow for the establishment of chalk grassland*.'	LSP.18
	'*The ancient woodland compensation planting strategy will be designed to achieve the most ecologically beneficial woodland habitat*…'	LSP.19
	'*Grassland on roadside verges and earthworks including embankments, cuttings and false cuts shall be seeded to become species-rich grassland and include wildflowers, suitable to underlying soil and subsoil type*…'	LSP.20
	'Integrate any above-ground infrastructure required for the operation and maintenance of the utility networks into the setting of the area, or screen by landscaping, where practicable and compliant with the requirements of the utility owner.'	STR.17
	'*Proposals shall balance mitigation requirements for noise and visual impact in such a way as to minimise the negative impact on tranquillity and landscape character. Required noise mitigation structures shall be designed and (where reasonably practicable) screened with planting to minimise the perception of the urbanisation in rural areas*…'	STR.10
	'*To preserve the rural and historic nocturnal character of the landscape along the Project route… lighting will be minimised wherever it is reasonably practicable and safe to do so…* *To preserve local nocturnal character…lighting required at 'off-line' operational areas…(such as at the portals) shall be controllable, directional and as low-level as is practicable*…'	LST.02, LST.03
Area-specific		
Section 1 **<u>Relevant receptors</u>** <u>Landscape</u> West Kent Downs (sub area Shorne) West Kent Downs (sub area Cobham)	Embedded landscape mitigation measures for Section 1 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	'*To reduce the impact on the Kent Downs AONB, the preliminary design has been developed to reduce the width of the A2 corridor footprint as far as reasonably practicable. The detailed design shall be developed to minimise the footprint of the works associated with the Project and diverted utilities in order to maximise the areas available for woodland planting*…'	S1.03
	'*New woodland east of Shorne Woods Country Park shall be provided to link Shorne Woods with Great Crabbles Wood…The design of woodland shall retain key views*	S1.08

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
Visual Representative Viewpoints S-02 to S-18 Visual receptor references VR-01	*from the upper slopes of the new woodland across to the Darnley Mausoleum*…'	
	'*In order to integrate the Project into the surrounding landscape and provide screening to improve the setting of Cobham Hall, new landforms shall avoid the appearance of unnatural valleys between the Project and HS1*…'	S1.16
	New multifunctional green bridges at Brewers Road and Thong Lane south to support landscape integration and act as local landmarks.	S1.04
	Woodland planting (Landscape Element (LE)2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species), planted as multipurpose features for visual screening, to aid landscape integration and support nature conservation and biodiversity within the A2 corridor adjacent to retained features outside the utility easements, and as part of the ancient woodland compensation planting.	LSP.02, LSP.04, LSP.11, LSP.15, LSP.19, S1.01, S1.02, S1.06, S1.07, S1.08, S1.10, S1.11, S1.13, S1.14
	Species-rich/wildflower/acid grassland (LE1.3, 1.5, 1.6) typically planted adjacent to the Project road.	LSP.02, LSP.11, LSP.15, LSP.20, S1.07
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species), including those on the green bridge structures.	LSP.02, LSP.04, LSP.11, LSP.15, S1.07, S1.11, S1.12
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted on the green bridge structures.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S1.07, S1.10
	Specimen/individual trees and scattered trees (LE2.7, 5.1).	LSP.02, LSP.11, S1.07
	Wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S1.07
Section 2 **Relevant receptors** Landscape West Kent Downs (sub area Shorne) Istead Arable Farmlands	Embedded landscape mitigation measures for Section 2 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	Earthwork design: 4m high false cutting along Project road southbound to A2 eastbound slip road (4m higher than the proposed carriageway ground level, typically with a 1(v)10(h) outward slope).	LSP.09
	Earthwork design: Project road in 4m deep cutting for approximately 400m south of Thong Lane green bridge north (minimum 4m lower than adjacent ground level).	Engineering Drawings and Sections

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
Higham Arable Farmland (sub area Thong) Gravesend Southern Fringe Visual Representative Viewpoints S-19 to S-28 Visual receptor references VR-02		(Application Document 2.9)
	A new multifunctional green bridge at Thong Lane north to support landscape integration and visual screening.	S2.04, S2.09
	Species-rich/wildflower/acid grassland (LE1.3, 1.5, 1.6) typically planted surrounding the M2/A2/A122 Lower Thames Crossing junction woodland planting as part of the open landscape.	LSP.02, LSP.11, LSP.15, LSP.20, S2.01
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species) extensively planted within the new M2/A2/A122 Lower Thames Crossing junction as part of visual screening and landscape integration and as part of the ancient woodland compensation planting to the eastern edge of Gravesend.	LSP.02, LSP.04, LSP.10, LSP.11, LSP.15, LSP.19, S2.01, S2.03, S2.06, S2.09
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species) within the new M2/A2/A122 Lower Thames Crossing junction and also along the modified A2 corridor as part of landscape integration.	LSP.02, LSP.04, LSP.11, LSP.15, S2.09
	Native hedgerows (LE4.2, 4.3, 4.4).	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S2.09
	Specimen/individual trees and scattered trees (LE2.7, 5.1).	LSP.02, LSP.11, S2.09
	Wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S2.08
Section 3 **Relevant receptors** Landscape Higham Arable Farmland (sub area Chalk) Visual Representative Viewpoints S-29 to S-38	Embedded landscape mitigation measures for Section 3 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	'*Open views across the landscape north of Thong Lane shall be maintained as far as reasonably practicable. Where the road is in cutting, fencing, signage, gantries and lighting columns shall be positioned within the cutting to reduce their visual impact on views across the wider landscape as far as reasonably practicable*.'	S3.01
	Earthwork design: a maximum 28m deep cutting for the South Portal approach road, over approximately 1,200m north of Thong Lane green bridge north (with the top of	STR.02, LSP.18, S3.01, S3.03, S3.11

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
Visual receptor references VR-03	the chalk cutting graded back to allow establishment of chalk grassland).	
	Earthwork design: raised earthworks as screening to the new substation adjacent to the A226 and operational equipment at the South Portal.	S3.10, S3.16
	Species-rich/wildflower/acid grassland/rock and scree (LE1.3, 1.4, 1.5, 1.6) typically planted within the South Portal cutting and within Chalk Park.	LSP.02, LSP.11, LSP.15, LSP.20, S3.04, S3.08
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species) at the Thong Lane green bridge north and within Chalk Park as visual screening and landscape integration. This includes ancient woodland compensation planting located north of Brummelhill Wood.	LSP.02, LSP.04, LSP.11, LSP.15, LSP.19, S3.02, S3.04, S3.07, S3.15
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species) within Chalk Park to aid landscape integration.	LSP.02, LSP.04, LSP.11, LSP.15
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted within the landscape returned to agriculture to the east of the Project route as visual screening, landscape integration and restoration of historic field pattern.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S3.05, S3.09
	Specimen/individual trees and scattered trees (LE2.7, 5.1) typically planted within the new open space at Chalk Park and adjacent to the tunnel cutting as part of the landscape integration.	LSP.02, LSP.11, S3.02
	Cascading water bodies with wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S3.06
	Hard landscape elements (LE7) including use of a green/brown roof for the Tunnel Services Building.	STR.02
Section 9 **<u>Relevant receptors</u>** <u>Landscape</u> Tilbury Marshes Chadwell Escarpment Urban Fringe	Embedded landscape mitigation measures for Section 9 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	'*The form and structure of the Tilbury Viaduct shall be designed…to maximise views through the viaduct structure and to minimise its intrusion into the wider landscape and visual impact on surrounding properties…* *The positioning of gantries and other infrastructure on the viaduct shall be designed to avoid accentuating the height and massing of the viaduct so far as reasonably practicable. The viaduct shall not be lit*.'	S9.16

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
West Tilbury Urban Fringe Visual Representative Viewpoints N-01 to N-12 Visual receptor references VR-08	Tilbury Fields: new sculptural landscape mounding shall be designed with elevated areas to create vistas and provide views to features such as Tilbury Fort and Coalhouse Fort. The sculptural landscape mounding, up to 17m above existing ground level (24m above ordnance datum), shall also provide views across the estuary and create a bold landmark feature, contrasting with the existing flat former marshland landscape character.	S9.02
	Species-rich/wildflower/acid grassland (LE1.3, 1.5, 1.6) typically planted on the Project earthworks and sculptural landscape mounding.	LSP.02, LSP.11, LSP.15, LSP.20, S9.02
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species), planted adjacent to the Project road on and next to the Project earthworks, to replace lost features and integrate with surrounding features. This includes strengthening the wooded ridgeline on the Chadwell escarpment.	LSP.02, LSP.04, LSP.10, LSP.11, LSP.15, S9.11
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species), planted adjacent to the Project road on and next to the Project earthworks, to replace lost features and integrate with surrounding features.	LSP.02, LSP.04, LSP.11, LSP.15, S9.10
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted to reinforce the agricultural field pattern and the perimeter of the earthworks as landscape integration.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15
	Specimen/individual trees and scattered trees (LE2.7, 5.1).	LSP.02, LSP.11, S9.10
	Water bodies reflective of existing form and landscape character. Wetland planting associated with waterways and water bodies and ecological habitat (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S9.10, S9.13, S9.14
	Hard landscape elements (LE7), including use of a green/brown roof for the Tunnel Services Building.	STR.02
Section 10 **Relevant receptors**	Embedded landscape mitigation measures for Section 10 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	Earthwork design: 4m high false cuttings on northbound and southbound carriageways throughout Section 10 (4m higher than the proposed carriageway ground level).	LSP.09

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
Landscape West Tilbury Urban Fringe Linford/ Buckingham Hill Urban Fringe White Croft/ Orsett Heath Urban Fringe Visual Representative Viewpoints N-13 to N-23 Visual receptor reference VR-10	A new green bridge at Muckingford Road with 1(v)10(h) slackened slopes returned to agriculture, and a new green bridge at Hoford Road.	S10.01, S10.03
	Species-rich/wildflower grassland (LE1.3, 1.5, 1.6) typically planted on the Project earthworks.	LSP.02, LSP.11, LSP.15, LSP.20
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species), planted along the existing watercourse within the landscape and adjacent to existing features at Rainbow Wood (including ancient woodland compensation planting) and Orsett Golf Club, to replace lost features, aid visual screening and landscape integration.	LSP.02, LSP.04, LSP.11, LSP.15, LSP.19, S10.02, S10.04, S10.05, S10.07
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species) along the Project route to aid landscape integration.	LSP.02, LSP.04, LSP.11, LSP.15
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted to reinforce the agricultural field pattern and the perimeter of the earthworks as landscape integration features. In addition, for visual screening, integrating green bridges and restoring the character of Hoford Road.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S10.01, S10.03, S10.04
	Specimen/individual trees and scattered trees (LE2.7, 5.1) typically planted throughout the Project route to aid landscape integration.	LSP.02, LSP.11, S10.03
	Wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S10.08
Section 11 **Relevant receptors** Landscape White Croft/ Orsett Heath Urban Fringe Orsett Lowland Farmland Visual Representative Viewpoints N-19 to N-26 Visual receptor references VR-11	Embedded landscape mitigation measures for Section 11 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	Earthwork design: 2m to 4m high false cuttings along slip roads at the A13/A1089/A122 Lower Thames Crossing junction (2m to 4m higher than the proposed carriageway ground level).	LSP.09
	Earthwork design: landscape mounding up to 11m above the existing ground, and one landscape mound up to 9m above the existing A13, within and around the A13/A1089/A122 Lower Thames Crossing junction, to help integrate the new junction into the surrounding landscape.	Engineering Drawings and Sections (Application Document 2.9)
	Earthwork design: Project road in up to 5m deep cutting for approximately 2.3km from Hornsby Lane to Green Lane.	Engineering Drawings and Sections (Application Document 2.9)

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
	Earthwork design: an earth bund to limit the land required near the windmill on Baker Street and provide visual mitigation.	S11.09
	A new green bridge at Green Lane with 1(v)10(h) slackened slopes.	S11.11
	'*The design of any necessary lighting on the elevated slip roads shall minimise light pollution, subject to relevant standards*.'	S11.03
	Species-rich/wildflower grassland (LE1.3, 1.5, 1.6) typically planted on the Project earthworks along the Project route and within the A13/A1089/A122 Lower Thames Crossing junction, including within visibility splays.	LSP.02, LSP.11, LSP.15, LSP.20, S11.01, S11.06, S11.11
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species), extensively planted within the new A13/A1089/A122 Lower Thames Crossing junction to aid landscape integration and visual screening of the junction and its infrastructure.	LSP.02, LSP.04, LSP.10, LSP.11, LSP.15, S11.01, S11.05, S11.09
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species), planted within the new A13/A1089/A122 Lower Thames Crossing junction where available space is restricted.	LSP.02, LSP.04, LSP.11, LSP.15, S11.06, S11.07, S11.08
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted to the perimeter of the Project route to help restore the field pattern and integrate the Project and Green Lane green bridge.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S11.11
	Specimen/individual trees and scattered trees (LE2.7, 5.1) typically planted throughout the Project route to aid landscape integration.	LSP.02, LSP.11, S11.07
	Wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17,
Section 12 **<u>Relevant receptors</u>** <u>Landscape</u> Orsett Lowland Farmland Thurrock Reclaimed Fen	Embedded landscape mitigation measures for Section 12 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	Earthwork design: '*Given the landscape character of limited tree and hedgerow cover and flat topography, the footprint of earthworks shall be reduced in this area so far as reasonably practicable*…'	S12.01
	Earthwork design: 2m high false cuttings along Project road northbound and southbound carriageways for approximately 700m north of Green Lane (2m higher than the proposed carriageway ground level).	LSP.09

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
(sub area Mardyke) Belhus Lowland Quarry Farmland <u>Visual</u> Representative Viewpoints N-27 to N-36 Visual receptor references VR-12	Earthwork design: 2m high false cutting along Project road southbound carriageway for approximately 800m west of footpath 136 (2m higher than the proposed carriageway ground level).	LSP.09
	Earthwork design: Project road in up to 5.5m deep cutting for approximately 870m east and west of North Road.	Engineering Drawings and Sections (Application Document 2.9)
	Earthwork design: 5m high false cutting along Project road southbound carriageway for approximately 1.4km west of North Road (5m higher than the proposed carriageway ground level).	LSP.09
	Earthwork design: 5m high false cutting along Project road northbound carriageway for approximately 300m west of North Road (5m higher than the proposed carriageway ground level).	LSP.09
	Earthwork design: landscape mounding up to 6m above existing ground along the Project road northbound carriageway for approximately 800m beyond the false cutting west of North Road (5m higher than the proposed carriageway ground level), to help integrate the Project route into the surrounding landscape.	Engineering Drawings and Sections (Application Document 2.9)
	'*The form and structure of Mardyke and Orsett Fen Viaducts shall be designed… to minimise intrusion into the wider landscape and to maximise views through the viaduct structure that maintain the expansive views across the open, flat landscape.* *The positioning of gantries and other infrastructure on the viaduct shall be designed to avoid accentuating the height and massing of the viaduct so far as reasonably practicable. The viaduct shall not be lit*.'	STR.04, S12.03, S12.04
	A new green bridge at North Road.	S12.13
	Species-rich/wildflower grassland (LE1.3, 1.5, 1.6) typically planted on the Project earthworks and immediately adjacent to the Project route through the Orsett Fen, and between North and South Ockendon.	LSP.02, LSP.11, LSP.15, LSP.20, S12.11, S12.13
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species), including some wet woodland, on the earthworks where the Project transitions to viaduct within the Orsett Fen, as well as at linear features next to the Project route and at the new overbridge structures. Provided to aid landscape integration and provide visual screening across this landscape.	LSP.02, LSP.04, LSP.11, LSP.15, S12.01, S12.02, S12.10, S12.12, S12.14

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species), planted in combination with woodland planting features on the Project earthworks to aid landscape integration and visual screening.	LSP.02, LSP.04, LSP.11, LSP.15, S12.14
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted adjacent to Project earthworks to restore field pattern and landscape features and aid visual screening.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15, S12.11, S12.13
	Specimen/individual trees and scattered trees (LE2.7, 5.1) planted alongside the Project route within this section.	LSP.02, LSP.11
	Wetland planting associated with waterways and water bodies reflective of the historic fen landscape within Orsett Fen, to restore former landscape pattern and features and aid integration (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17, S12.01, S12.06, S12.07
Sections 13 and 14 **<u>Relevant receptors</u>** <u>Landscape</u> Thurrock Reclaimed Fen (sub area Thames Chase) Belhus Lowland Quarry Farmland Brentwood Wooded Hills <u>Visual</u> Representative Viewpoints N-37 to N-44 Visual receptor references VR-13 and VR-14	Embedded landscape mitigation measures for Section 13 and Section 14 are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). This includes the following measures:	
	Earthwork design: 2m high false cutting along Project road northbound to M25 northbound slip road (2m higher than the proposed carriageway ground level).	LSP.09
	Earthwork design: outward facing slopes adjacent to Thames Chase Forest Centre to be 1(v)4(h) to minimise tree loss and allow for woodland planting.	S14.06
	Earthwork design: landscape mounding up to 10m in height above the existing M25 between the Project road northbound slip road and existing M25, to help integrate the Project route and M25 corridor into the surrounding landscape.	Engineering Drawings and Sections (Application Document 2.9)
	Species-rich/wildflower grassland (LE1.3, 1.5, 1.6) typically planted on the Project earthworks and immediately adjacent to the Project route.	LSP.02, LSP.11, LSP.15, LSP.20
	Woodland planting (LE2.1, 2.2, 2.3, 2.4) typically of native species (with some climate-change-adapting species) at the A122 Lower Thames Crossing/M25 junction and on the Project earthworks within Thames Chase Forest Centre. Also includes ancient woodland compensation planting adjacent to existing woodland features. Woodland planting provided to reinforce landscape pattern and features and aid visual screening.	LSP.02, LSP.04, LSP.10, LSP.11, LSP.15, LSP.19, S14.01, S14.02, S14.07, S14.13, S14.14
	Shrub/scrub planting (LE2.5, 2.6, 2.8) typically of native species (with some climate-change-adapting species), planted in combination with woodland planting features	LSP.02, LSP.04, LSP.11, LSP.15

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Location	Mitigation measures	Design Principle reference(s)/ drawing reference
	on the Project earthworks to aid landscape integration and visual screening.	
	Native hedgerows (LE4.2, 4.3, 4.4) typically planted adjacent to Project earthworks to restore field pattern and landscape features and aid visual screening.	LSP.02, LSP.04, LSP.11, LSP.13, LSP.14, LSP.15
	Specimen/individual trees and scattered trees (LE2.7, 5.1) typically planted alongside the Project route.	LSP.02, LSP.11
	Wetland planting associated with waterways and water bodies (LE6.1, 6.2, 6.3, 6.4).	LSP.02, LSP.11, LSP.15, LSP.17
	Hard landscape elements (LE7), including the use of soft landscaping to the front of the retaining structure at Franks Farm.	S14.09

Good practice

Construction phase good practice

7.5.13 Construction phase good practice of relevance to this landscape and visual chapter is set out in Table 7.12. This includes Project-wide considerations.

Table 7.12 Landscape and visual – construction phase good practice measures

Location	Mitigation measures	REAC/CoCP Ref.
Project-wide	Hoarding shall be erected to the boundary of activity sites where visual screening is required from residential properties, PRoWs and recreational areas. Hoarding will typically be 2.4m high but could be higher in the highest security risk areas. The form of fencing and hoarding will be fit for purpose, taking into consideration the location, construction activities and surrounding landscape.	CoCP section 6.7
Project-wide	Lighting will be designed, positioned and directed to prevent or minimise light disturbance to nearby residents.	CoCP section 6.8
Project-wide	'*Temporary fencing would be used to demarcate important and protected habitats, preventing construction access to protect them from accidental damage. Important and protected habitats include ecological translocation sites and retained woodland, trees and hedgerows shown on the Environmental Masterplan (Figure 2.4, Application Document 6.2), except where the SoS has agreed to vary the demarcation of such retained woodland, trees and hedges having consideration for REAC commitment TB003. Fencing would be installed under the supervision of the Environmental Clerk of Works and in accordance with good practice guidance. It shall include tree protection measures specified in the Arboricultural Method Statement*.'	TB002

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Location	Mitigation measures	REAC/CoCP Ref.
Project-wide	'*Work compounds, access tracks, haulage routes, material storage areas, generators and other construction activities would not be located within areas of retained woodland, trees and hedges shown on the Environmental Masterplan (Figure 2.4, Application Document 6.2) unless the SoS agrees that any variation does not result in new or materially different significant environmental effects to those reported in the ES*.'	TB003
Project-wide	'*Land temporarily impacted by works to divert utilities would be reinstated to its former condition and composition upon completion, as far as reasonably practicable, unless otherwise specified in the Environmental Masterplan (Figure 2.4, Application Document 6.2) or under the terms of article 35 of the draft DCO, which sets out the temporary possession powers*.'	LV002
Project-wide	'*Where guards are used to protect seedlings and whips, the use of plastic tree guards would be avoided in favour of biodegradable options where available. In the event that plastic guards are used, these will be removed within five years of installation*.'	LV004
Project-wide	'*Employment of a suitably qualified and experienced Environmental Clerks of Works throughout the construction phase of the Project to supervise implementation of environmental mitigation and protection commitments*.'	TB006
Project-wide	'*Soils would be handled and stored to allow their sustainable reuse in line with the DEFRA Construction Code of Practice for the Sustainable Use of Soil on Construction Sites (2009) and the* [Ministry of Agriculture, Fisheries and Food] *and then MAFF Good Practice Guide for Handling Soils (2000). Full details of the soil resources present and the procedures for soils management (covering vegetation clearance, setting out haul routes, soil stripping, stockpile creation and management, soil reconditioning (where required) and soil reuse) would be set out prior to any soil stripping works commencing, covering all proposed end uses (e.g. agricultural land, woodland or other habitat types)*.'	GS009
Project-wide	'*Characterisation of the existing soil to determine its resilience to handling and stripping depths would be based on detailed soil surveys. Where information is not available (i.e. from the detailed Agricultural Land Classification (ALC) surveys), pre-construction soil surveys would be undertaken to inform the development of appropriate soils management procedures*.'	GS010
Project-wide	'*Soil on land identified on ES Figure 2.4, the Environmental Masterplan, which is used during construction, will be profiled to support the land use identified on the Environmental Masterplan (Figure 2.4, Application Document 6.2). The soil will be fully restored, in accordance with the soil reuse requirements in the soils management procedures (REAC ref. GS009), and will be recreated in the correct sequence of horizons, in such a manner that there are good fissures to facilitate soil profile drainage and plant root development*.'	GS011
Project-wide	'*Reinstatement of soils affected by temporary works would aim to avoid any reduction in soil function. For agricultural land this*	GS012

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Location	Mitigation measures	REAC/CoCP Ref.
	will be measured by the quality of the land as defined by the ALC system (with a soil profile recreated to 1.2m below ground level where this was the pre-construction soil depth). For areas of landscape planting or habitat creation this will be measured by the successful restoration of the soil profile (both physical and chemical characteristics) defined for that particular habitat in the soils management procedures suitable to allow the establishment and long-term health of the habitat.'	
Project-wide	'*Procedures for the management of soil resources would include provisions for:* *i. Ensuring soils are stripped and handled in the driest condition practicable* *ii. Ensuring topsoil and subsoil resources are stripped and stockpiled separately* *iii. Keeping records of excavated and stored soils* *iv. Confining vehicle movements to defined haul routes until all the soil resource has been stripped* *v. Protection of stockpiles from erosion through establishment of a grass cover unless the soil materials are to be reused in a short timeframe (<60 days) in which case alternative erosion control measures may be required, such as silt fencing or the use of geotextile blankets* *vi. Protection from tracking over using signage or fencing* *vii. Ensuring the physical condition of the replaced soil profile to at least 1.2m below ground level and that it is sufficient for the post-construction use* *viii. The use of toolbox talks to inform all those working on the site of the requirements for soil handling, storage and reuse*'	GS013
Southern tunnel entrance compound	'*Earth bunds of approximately 2-3m in height formed from material excavated onsite would be sited along the boundary of the compound, as material becomes available to facilitate visual screening for residential properties on Thong Lane and Rochester Road (A226) during construction*. *The phasing of the works would be planned so that the bunds are in place before the main compound activities commence, subject to excavated material availability.*'	LV008
A226 Gravesend Road compound	'*Earth bunds of 3m in height would be formed from material excavated and retained onsite, as material becomes available to facilitate visual screening for residential properties on Castle Lane, Chalk*.'	LV011
Station Road compound	'*Where soil is excavated and retained onsite temporarily, it would be stockpiled in the form of earth bunds to facilitate visual screening for residential properties along Church Road and Station Road*.'	LV015
Brentwood Road compound	'*Where soil is excavated and retained onsite temporarily, it would be stockpiled in the form of an earth bund on the southern boundary of the compound to facilitate visual screening for residential properties within Chadwell St Mary where reasonably practicable*.'	LV017

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Location	Mitigation measures	REAC/CoCP Ref.
Mardyke compound	'*Where soil is excavated and retained onsite temporarily, it would be stockpiled in the form of earth bunds to facilitate screening for Hobletts to the north-east*.'	LV021
M25 compound	'*A 2-3m high bund would be formed from excavated soil along the northern and eastern edges of the M25 compound, including around the soil storage area. The phasing of the works would be planned so that the bunds are in place before the main compound activities commence, subject to excavated material availability. The bund would be seeded with a grass mix suited to the local context. Where further soil is excavated and retained onsite temporarily, it would be stockpiled Up to 6m high in the north-eastern part of the compound. These measures would facilitate visual screening for the North Ockendon Conservation Area and local residents*.'	LV024
Ockendon Road compound	'*Where soil is excavated and retained onsite temporarily, it would be stockpiled in the form of earth bunds on the south and west boundaries of the compound, where required to facilitate screening for Ockendon Road and the nearest residential properties at the static caravan park*.'	LV026

Operational phase good practice

7.5.14 Operational phase good practice of relevance to the landscape and visual chapter is set out within Table 7.13. This includes Project-wide considerations.

Table 7.13 Landscape and visual – operational phase good practice measures

Location	Mitigation measures	REAC Ref.
Project-wide	'*The first five years of vegetation establishment would be overseen by an Environmental Clerk of Works. Vegetation that has failed to establish would be replaced as soon as identified within the next available planting season. At the end of the establishment period, subsequent landscape management would be undertaken in accordance with the LEMP.*'	LV003

7.5.15 The detailed LEMP produced in accordance with Requirement 5 of the draft DCO (Application Document 3.1) would include requirements for the maintenance and management of all soft landscaping incorporated into the Project and the responsibility of National Highways. The appointed Contractors would be responsible for undertaking landscape management within the establishment aftercare period (five years after Project opening), after which the longer-term maintenance and management of the soft estate responsibilities would transfer to National Highways in accordance with standard practice.

7.5.16 At the end of the establishment aftercare period, before handover of the Project to National Highways or its appointed agent, a further update of the detailed LEMP would be prepared by the Contractors to identify the longer-term maintenance and management requirements and responsibilities for the landscape and environmental commitments and mitigation during operation.

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Essential mitigation

Potentially significant effects

7.5.17 An iterative appraisal of the Project design, taking into account the design principles and good practice, was undertaken to identify any potentially significant effects that would require essential mitigation. Landscape and visual effects that could be significant and therefore required further consideration for essential mitigation were identified as follows:

a. Impacts to landscape character and visual amenity within the West Kent Downs LCA 1A (and two sub areas) during construction and operational phases

b. Impacts to landscape character and visual amenity within the Istead Arable Farmlands LLCA during construction and operational phases

c. Impacts to landscape character and visual amenity within the Higham Arable Farmland (sub area Thong) LLCA during construction and operational phases

d. Impacts to landscape character and visual amenity within the Higham Arable Farmland (sub area Chalk) LLCA during construction and operational phases

e. Impacts to landscape character and visual amenity within the Gravesend Southern Fringe LLCA during the construction phase

f. Impacts to landscape character and visual amenity within the Shorne and Higham Marsh LLCA during the construction phase

g. Impacts to landscape character within the Tilbury Marshes LLCA during the construction phase and visual amenity during construction and operational phases

h. Impacts to landscape character and visual amenity within the Chadwell Escarpment Urban Fringe LLCA during construction and operational phases

i. Impacts to landscape character and visual amenity within the West Tilbury Urban Fringe LLCA during construction and operational phases

j. Impacts to visual amenity within the Linford/Buckingham Hill Urban Fringe LLCA during construction and operational phases

k. Impacts to landscape character and visual amenity within the White Croft/Orsett Heath Urban Fringe LLCA during construction and operational phases

l. Impacts to landscape character and visual amenity within the Orsett Lowland Farmland LLCA during construction and operational phases

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m. Impacts to landscape character and visual amenity within the Thurrock Reclaimed Fen (sub area Mardyke) LLCA during construction and operational phases

n. Impacts to landscape character and visual amenity within the Thurrock Reclaimed Fen (sub area Thames Chase) LLCA during construction and operational phases

o. Impacts to landscape character and visual amenity within the Belhus Lowland Quarry Farmland LLCA during construction and operational phases

Construction phase essential mitigation

7.5.18 Construction phase essential mitigation of relevance to this landscape and visual chapter is set out within Table 7.14. This includes some Project-wide considerations and location-specific requirements, including those relating to construction compounds and Utility Logistics Hubs.

Table 7.14 Landscape and visual – construction phase essential mitigation measures

Location	Mitigation measures	REAC Ref.
Project-wide	*'Hedgerow habitat lost during construction would be compensated by creating new hedgerows at locations shown on the Environmental Masterplan (Figure 2.4, Application Document 6.2), using native species of local provenance. Planting would be undertaken as early in the construction programme as reasonably practicable, having regard for the completion of potentially damaging construction activities within and adjacent to the planting area, and seasonal requirements for planting.'*	TB001
Project-wide	*'Detailed design for the Project, including diverted utilities, will aim to reduce the removal of trees and vegetation as far as reasonably practicable, and in accordance with the LEMP and the Environmental Masterplan (Figure 2.4, Application Document 6.2).'*	LV001
Project-wide	*'Where excavation for installation of utilities would require the removal of ancient woodland, trees subject to tree preservation orders or hedgerows subject to the Hedgerows Regulations 1997, trenchless installation methods will be used to avoid removal where reasonably practicable, unless this would give rise to new or materially different environmental effects.'*	LV013
Project-wide	*'An Arboricultural Method Statement and Tree Protection Plan would be prepared in accordance with BS 5837:2012* [British Standards Institution]*, identifying measures for the protection of retained woodland, trees and hedges prior to the commencement of site clearance works. All works to woodland, trees and hedges and vegetation removal would be implemented under the supervision of the Environmental Clerk of Works having regard for the commitment to reduce the removal of trees and vegetation as far as reasonably practicable as set out in LV001.'*	LV028

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Location	Mitigation measures	REAC Ref.
Project-wide	'*In accordance with standing advice prepared by Natural England and the Forestry Commission (2022), the following measures would be developed to protect retained veteran trees and trees in ancient woodland identified on the Environmental Masterplan (Figure 2.4, Application Document 6.2):* *1. Screening barriers would be provided to protect retained ancient trees, ancient woodland and veteran trees from dust and pollution from nearby works. Locations of barriers will be defined in accordance with the requirements set out in REAC item LV028.* *2. A buffer zone would be defined to avoid impact on root zones. These would be as follows:* • *For ancient and veteran trees, the buffer would be a minimum of 15 times the diameter of the tree trunk or 5m beyond the canopy, where practicable, whichever is the greater* • *For ancient woodland, a buffer of at least 15m from the boundary of the woodland would be maintained between the proposed construction activity and the asset where practicable.* *These measures would be followed by the Contractors unless specifically agreed by National Highways, following the advice of a qualified arboriculturist, and following assessment which demonstrates that the implementation of other mitigation measures would permit a smaller buffer whilst still maintaining the viability of the tree or woodland.* *The above measures shall not apply to those trees show to be removed on Figure 7.24 of the Arboricultural Impact Assessment (ES Appendix 7.12, Application Document 6.3) or if the Secretary of State certifies that not implementing such measures would not result in new or materially different environmental effects to those reported in the ES.'*	LV030
Project-wide	'*Where removal of veteran trees is required, the intact hulks of felled veteran trees would be relocated in close proximity to a nearby veteran tree or placed within a parkland area. Where tree removal is required within ancient woodland, then timber will be retained and placed in log piles and left to decompose naturally. These measures accord with standing advice prepared by Natural England and the Forestry Commission (2022). These measures would provide opportunity for invertebrates and fungi resident within the tree to relocate and will promote habitat formation. The location and method for the placement of tree hulks and timber will be identified following liaison with the relevant local planning authorities and shall be informed by arboricultural and ecological assessment*.'	LV031
Project-wide	'*A minimum of 30 individual specimen trees would be planted as replacement for lost veteran trees. Fifteen such trees would be planted to the south of the River Thames and 15 to the north of the River Thames. The location, stock size and species selection would be agreed with the SoS following consultation with the relevant local planning authorities. Suitable species could include a combination of oak (Quercus robur) and sweet chestnut (Castanea sativa). This would be undertaken during the construction phase within locations selected to allow sufficient open space for establishment of an open crown, whilst being as close as reasonably practicable to the location*	LV032

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Location	Mitigation measures	REAC Ref.
	of the lost existing veteran trees to provide some ecological connection with other veterans nearby.'	
Construction within the Kent Downs AONB	'*No main compounds, as defined in the Project description presented in ES Chapter 2 (Application Document 6.1), would be located within the Kent Downs…AONB*.'	LV005
Marling Cross compound	'*Construction compound facilities greater than 6m in height would be located as southerly as is reasonably practicable to maximise the distance from residential properties on Valley Drive and Mackenzie Way and minimise visual prominence*.'	LV006
A2 compound	'*Construction compound facilities greater than 6m in height would be located as south-westerly as is reasonably practicable to maximise distance from nearby residential properties on Thong Lane and from the adjacent boundary of the Kent Downs AONB*.'	LV007
Southern tunnel entrance compound	'*Softening the appearance of temporary earthwork stockpiles adjacent to the Kent Downs AONB by phasing the works to be such that south-east facing slopes are retained as grass seeded slopes for visual screening purposes for as long as reasonably practicable*.'	LV009
Southern tunnel entrance compound	'*Construction compound facilities greater than 6m in height would be located to maximise distance from residential areas of Chalk and adjoining Thong Lane, and Polperro, Horseshoe Meadow and Viewpoint Place on the Rochester Road (A226), together with Thamesview School, as far as reasonably practicable*.'	LV010
A226 Gravesend Road compound	'*Construction compound facilities greater than 6m in height would be located as south-easterly as reasonably practicable to maximise distance from residential properties on Castle Lane, Chalk*.'	LV012
Station Road compound	'*Construction compound facilities greater than 6m in height would be located at the south of the compound, adjacent to the northern tunnel entrance compound, where reasonably practicable, to maximise distance and visual screening from residential properties on Church Road and Station Road*.'	LV016
Brentwood Road compound	'*Construction compound facilities greater than 6m in height would be located at the north of the compound, as far as reasonably practicable, to reduce visibility from residential properties at Chadwell St Mary*.'	LV018
Stifford Clays Road compound East	'*Construction compound facilities greater than 6m in height would be located as westerly as reasonably practicable, to maximise distance from residential properties on Stifford Clays Road and Fen Lane*.'	LV019
Mardyke compound	'*Construction compound facilities of greater than 6m in height would be located as westerly as reasonably practicable to minimise visibility from residential property (Hobletts)*.'	LV020

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Location	Mitigation measures	REAC Ref.
M25 compound	*'Construction compound facilities of greater than 6m in height would be located along the southern boundary of the compound to maximise the distance from the North Ockendon Conservation Area and local residents, as indicated on Page 43 of ES Figure 7.8 - ZTV - 5km DTM Analysis of Main Construction Compounds (2 of 2).'*	LV022
M25 compound	*'It is anticipated that a concrete batching plant would be located within this compound. This facility would be located along the southern boundary of the compound, to maximise distance from the North Ockendon Conservation Area and local residents, as indicated on Page 44 of ES Figure 7.8 - ZTV - 5km DTM Analysis of Main Construction Compounds (2 of 2).'*	LV023
Ockendon Road compound	*'Construction of compound facilities of greater than 6m in height would be located as north-westerly as is reasonably practicable to minimise visibility from residential properties within the static caravan park located off Ockendon Road.'*	LV025
Warley Street compound	*'Construction compound facilities of greater than 6m in height would be located adjacent to the M25, as far as is reasonably practicable.'*	LV027
Long Lane compound A	*'Where reasonably practicable, stockpiles formed from material excavated onsite would be sited along the eastern boundaries of Long Lane compound A, as material becomes available. This is to reduce visual impacts for the caravan site off Gammonfields Way, and its subsequent relocation site immediately to the west.'*	LV033
Vegetation protection at The Wilderness	*'No woodland within The Wilderness will be removed in connection with the installation of Work No MUT27.'*	LV034
Southern tunnel entrance compound, phasing	*'Reducing the impact on residential properties on Thong Lane and Rochester Road (A226) during construction, by phasing the works in the following order of preference:* • *Excavating material and then directly placing it in its permanent position within Chalk Park where reasonably practicable* • *Where direct placement is not reasonably practicable, using the central part of the western soil storage area shown on Plate 1.3 of Appendix 2.1 Construction Supporting Information to temporarily store material* • *Where temporary storage in the central part of the western soil storage area shown on Plate 1.3 of Appendix 2.1 Construction Supporting Information is not reasonably practicable, extending material storage to the northern part of the soil storage area.'*	LV035
Southern tunnel portal compound, haul road	*'The route of the proposed haul road, which is intended to join the Rochester Road (A226) at points immediately to the west and east of the Horseshoe Meadow and Viewpoint Place traveller sites, shall be located as far from the traveller sites as is reasonably practicable, taking account of the need to ensure safety and having regard to the location of other sensitive receptors. So far as reasonably practicable, acoustic solid barriers will be provided between the Horseshoe Meadow and Viewpoint Place traveller sites and the haul road'.*	LV036

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Location	Mitigation measures	REAC Ref.
Screening of views in Kent Downs AONB	'*In order to reduce visual effects in the opening year in the Kent Downs AONB to the north of Park Pale, the following mitigation measures would be implemented:* • *Existing trees and hedgerow plants along the northern boundary of Park Pale (north-west of the Park Pale overbridge) would be retained as far as reasonably practicable during the installation of utilities associated with Work No. MU1. Existing trees and hedgerow plants situated south of the Harlex Haulage access track (Work No. 1C) and on both sides of the proposed diverted footpath NS161, extending up to the Park Pale overbridge and utility works (Work No. MU1), would also be retained as far as reasonably practicable. The protection of retained trees would be achieved through the implementation of an Arboricultural Method Statement (AMS) in accordance with LV028. The AMS will specify the tree protection measures which will be applied during construction. Protection measures may include access facilitation pruning, the erection of tree protection barriers and the arboricultural supervision of work that has the potential to cause damage to roots…*'	LV037
M25 compound, phasing	*'The management of stockpile operations within the soil storage area will be phased, with storage of materials starting in the southern part of the compound as far as reasonably practicable to maximise the distance from the North Ockendon Conservation Area and adjacent residents. If temporary material storage exceeds the capacity of the southern section of the soil storage area, the material storage would be extended to the northern part of the soil storage area.'*	LV038

Operational phase essential mitigation

7.5.19 Operational phase essential mitigation of relevance to this landscape and visual chapter is set out within Table 7.15. For brevity, the text in the table is based on extracts from the full description of mitigation measures set out in the Design Principles (Application Document 7.5) and the REAC, which forms part of the CoCP (Appendix 2.2, Application Document 6.3).

Table 7.15 Landscape and visual – operational phase essential mitigation measures

Location	Mitigation measures	REAC/ Design Principle Ref.
Project-wide	Detailed design: '*All false cuttings shall have rounded crest tops…*'	LSP.09
Project-wide	Detailed design: '*Infiltration basins… shall not appear utilitarian or urban and shall be designed to appear as naturalistic elements within the wider setting…*'	LSP.17
Project-wide	'*Where false cuttings and embankments associated with the Project route meet other landscape earthworks or landscape features, the earthworks shall be designed to integrate and terminate them in a naturalistic way…*'	LSP.21

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Location	Mitigation measures	REAC/ Design Principle Ref.
Project-wide	'*Planting identified on the Environmental Masterplan (Figure 2.4, Application Document 6.2) would be undertaken at the earliest practicable opportunity.* *Where planting is being undertaken to landscape or provide environmental mitigation on land used temporarily for the authorised development, planting for the implementation of environmental mitigation would be undertaken at the earliest practicable planting season after completion of that part of the construction works and in accordance with the LEMP.* *Planting on land taken solely for environmental mitigation purposes would be undertaken at the earliest practicable planting season following commencement of authorised development and in accordance with the LEMP*.'	LV029
Section 1	'*In order to reduce visual effects in the opening year in the Kent Downs AONB to the north of Park Pale, the following mitigation measures would be implemented:* • *…Proposed planting within the ancient woodland compensation site north of Park Pale and Harlex Haulage identified on the Environmental Masterplan (Sheet 2 and 4 of Section 1, Figure 2.4, Application Document 6.2) would be undertaken, in part, at the earliest practicable planting season following commencement of authorised development. Early planting would be outside of the land required for construction and would maximise early screening, as well as being in accordance with the LEMP. The early planting would not be in areas identified as being suitable for ancient woodland soil receptor sites where prior translocation of soil is required.*'	LV037
Project-wide	Detailed design of bridge structures, including green bridges, shall ensure they are not overbearing or obtrusive in the landscape, with a recognisable design language and consistent material palette.	STR.01 to STR.08, STR.11
Project-wide	'*In order to avoid duplication leading to the creation of visual clutter, environmental, acoustic, boundary fences and security barriers shall be combined into a single structure as much as reasonably practicable. Materiality and appearance shall be designed with consideration of the surrounding context of the landscape*.'	STR.09
Project-wide	Detailed design of acoustic barriers: '*…the materiality and appearance of the barrier shall be designed with respect to the surrounding context of the landscape…*'	STR.10
Project-wide	'*To avoid visual clutter, the amount of roadside furniture and signage shall be reduced (or combined) as far as reasonably practicable… Materiality and appearance shall be designed with consideration of the surrounding context of the landscape*.'	LST.01
Kent Downs AONB	'*Retaining structures and bridge abutments within the Kent Downs AONB and its setting, shall be either green walls, earth banks, or clad with hard materials in accordance with the Kent Downs*	S1.09, S2.10

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Location	Mitigation measures	REAC/ Design Principle Ref.
	AONB Landscape Design Handbook, to be reflective of the local vernacular.'	
A13/A1089/A122 Lower Thames Crossing junction	'*Within the islands of the A13 junction, earthworks shall be softened to appear more naturalistic and integrated into the landscape.*'	S11.01
Project-wide	'*The detail design of planting mitigation and planting compensation areas shall aim to maintain the key views/vistas identified in the area-specific design principles*.'	LSP.24
Project-wide	'*Where practicable and reasonable, the planting of larger tree and/or shrub species shall be set back from WCH routes and residential properties to maintain a sense of openness, as well as avoiding the obstruction of views*.'	LSP.25
Project-wide	'*Landscape design principles for habitat creation on the nitrogen deposition compensation sites are set out in the oLEMP (Application Document 6.7). Principles for retention of key vistas are included in the sections on area-specific principles*.'	LSP.27
Section 1	'*The detail design of ancient woodland compensation planting shall retain a framed long-range view south-west from footpath NS160 on the south-west edge of Great Crabbles Wood, towards woodland within Cobham Hall Grade II* Registered Park and Garden. Refer to Viewpoint S-02 location on Figure 7.16 (Application Document 6.2)*.'	S1.19
	'*The detail design of nitrogen deposition compensation planting shall retain a view south-east from Swiller's Lane and east from residential properties along Barndale Court and Warren View in Shorne village, over undulating landscape framed by skyline woodland at Court Wood, Cole Wood and Starmore Wood. Refer to Viewpoint N-Dep-RV-03 location on Figure 7.16 (Application Document 6.2).*'	S1.20
	'*The detail design of nitrogen deposition compensation planting shall retain a view south from footpath KT/NS/159 and footpath KT/NS/156, towards backdrop woodland at Court Wood, Cole Wood and Starmore Wood. Refer to Viewpoint N-Dep-RV-04 location on Figure 7.16 (Application Document 6.2)*.'	S1.21
Section 2	'*The detail design of ancient woodland and nitrogen deposition compensation planting shall retain a long-range vista west from footpath KT/NS/176 and footpath KT/NS/175, across the landscape towards St Margaret's Church. Refer to Viewpoint N-Dep-RV-01 location on Figure 7.16 (Application Document 6.2)*.'	S2.13
	'*The detail design of ancient woodland compensation planting adjoining residential properties on the eastern edge of Gravesend (Davy's Place, Fairfields, Astra Drive, Gazelle Glade, Glenrosa Gardens and Genesta Glade) shall aim to balance the need to visually screen views of the new road and provide ecological mitigation, with the aim of avoiding the obstruction of views and*	S2.14

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Location	Mitigation measures	REAC/ Design Principle Ref.
	overshadowing of gardens, and shall have regard to residential security, for example, by maintaining good natural surveillance.'	
Section 3, 4 and 5	'*The detail design of ancient woodland compensation planting shall retain a long-range view north from Shorne Ifield Road bordering Shorne Woods Country Park within the Kent Downs AONB, over the River Thames towards distant hills near Thorndon Country Park. Refer to Viewpoint S-29 location on Figure 7.16 (Application Document 6.2)*.'	S3.19
Section 10	'*The detail design of nitrogen deposition compensation planting shall retain a framed long-range view south from footpath FP45 within Orsett Golf Club, over the existing undulating landscape towards Chadwell St Mary. Refer to Viewpoint N-17 location on Figure 7.16 (Application Document 6.2).*'	S10.14
Section 13 and 14	'*The detail design of ancient woodland and nitrogen deposition compensation planting shall retain a view east from residential properties along Beredens Lane and south-east from Beredens Lane and footpath 272_110 within Thames Chase, towards Langdon Hills Country Park. Refer to Viewpoint N-44 location on Figure 7.16 (Application Document 6.2)*.'	S14.16
	'*The detail design of nitrogen deposition compensation planting shall retain vistas from footpath 272_110 west of the B186 Great Warley Street above Hole Farm, towards distant hills within Kent AONB to the south-east and in the direction of Codham Hall Wood to the south-west. Refer to Viewpoint N-Dep-RV-10 location on Figure 7.16 (Application Document 6.2)*.'	S14.17
	'*The detail design of nitrogen deposition compensation planting shall retain a view north-west from Codham Hall Lane, towards arable fields and woodland on rising ground near Beredens Lane, including Coombe Wood. Refer to Viewpoint N-Dep-RV-11 location on Figure 7.16 (Application Document 6.2)*.'	S14.18
Kent Downs AONB	'*Where reasonably practicable, and subject to consultation with the Local Highway Authority, lighting on green bridges shall be minimised and where possible column heights shall be reduced. Furthermore, the detailed design shall carefully consider the space allocation on the bridge to maximise the separation of the Highway and associated lighting from the green space. Where lighting is required, it shall be carefully designed to focus light onto the Highway and to minimise obtrusive light spill.*'	LST.04
Kent Downs AONB	'*Roadside furniture within the AONB including (but not limited to):* • *Gantries* • *Lighting columns* • *Signage* • *Technology* *Shall be finished to accord with the Kent Downs AONB Guidance on the selection and use of colour in development.*'	S1.24

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Enhancement

7.5.20 A specific enhancement measure for landscape and visual amenity, over and above the general enhancements included in the embedded mitigation, is set out in Table 7.16 below.

Table 7.16 Landscape and visual – enhancement measures

Location	Enhancement measures	Design Principle Ref.
Project-wide	Detailed design: *'Opportunities shall be sought in the detail design of planting to screen or soften the visual appearance of any existing visual detractors featuring in views, for example, overhead power lines.'*	LSP.26

7.6 Assessment of likely significant effects

7.6.1 This section presents the assessment of likely significant effects on landscape and visual receptors resulting from the construction and operational phases of the Project. This is based on the design of the Project and takes into account the mitigation as presented in Section 7.5.

7.6.2 The assessment considers the sensitivity and magnitude of effect criteria as presented in Table 7.3 to Table 7.6, and the significance of effects has been determined in accordance with the matrix provided in Table 4.3 of Chapter 4: EIA Methodology and through the use of professional judgement.

Construction phase

7.6.3 Construction activities could give rise to adverse impacts over the short to medium term, with activity focused along the Project route and at the main works construction compounds and Utility Logistics Hubs. Vegetation removal to facilitate construction of the Project, including for utility diversion works could result in adverse impacts over the long term due to the loss of established features.

7.6.4 Figure 7.8: ZTV – Lower Thames Crossing Main Construction Compounds Analysis (Application Document 6.2) has been prepared to inform the potential effects of the main construction compounds.

7.6.5 Figure 7.9: ZTV – Lower Thames Crossing Electricity Overhead Line Diversions Analysis (Application Document 6.2) has been prepared to inform the potential effects of the realignment of existing overhead electricity infrastructure.

Landscape (including landscape and seascape character)

7.6.6 The detailed landscape impact assessment is set out in Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3), with the significant effects summarised in the following text.

7.6.7 The location and extent of landscape character areas is shown on Figure 7.1: National Landscape Character including Seascape and Figure 7.2: Local Landscape Character Areas.

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National landscape character

7.6.8 Table 2.1 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment of predicted construction effects for all NCAs. Table 7.17, below, provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction within NCA 119: North Downs or NCA 111: Northern Thames Basin, these NCAs are excluded from Table 7.17.

Table 7.17 Schedule of landscape effects on NCAs during construction

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
NCA 113: North Kent Plain • Large-scale construction activity including the new M2/A2/A122 Lower Thames Crossing junction • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Partial loss of mature woodland (including some ancient woodland) along the A2 corridor, at Claylane Wood, at Gravelhill Wood and within the Shorne and Ashenbank Woods SSSI between the A2 and HS1 • Substantial loss of arable land • Substantial change to the existing flat to gently undulating landform • Further reduction in relative tranquillity experienced along the A2 corridor and edge of Gravesend, with a greater reduction apparent near the reclaimed marshes bordering the River Thames	High	Moderate adverse	**Moderate adverse**
NCA 81: Greater Thames Estuary • Small-scale reversible loss of farmland south of the River Thames • Conspicuous construction activity, particularly within the northern tunnel entrance compound • Loss of some scrub and hedgerow vegetation • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable and pastoral land north of the River Thames • Substantial change to the flat and open landform north of the River Thames • Further reduction in relative tranquillity experienced near existing urban development	Medium	Moderate adverse	**Moderate adverse**

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Marine Character Areas

7.6.9 Table 2.2 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) sets out the predicted landscape effects on MCAs during construction. In conclusion, no likely significant effects (moderate adverse significance of effect and above) are predicted during construction within the South East MCA 18: Thames and Medway Estuaries.

Local Landscape Character Areas

Kent Downs AONB

7.6.10 Table 2.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment for relevant LLCAs within the Kent Downs AONB during construction. Table 7.18 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction within the Mid Kent Downs (sub area Bredhurst), Hollingbourne Scarp and Vale (sub area Boxley Vale) and Medway Valley (sub area The Eastern Scarp) LLCAs, these LLCAs are excluded from Table 7.18.

Table 7.18 Schedule of landscape effects on LLCAs within the Kent Downs AONB during construction

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
West Kent Downs (sub area Cobham) • Large-scale construction activity to the north, mostly within West Kent Downs "(sub area Shorne) • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Vegetation loss to the north, mostly within West Kent Downs (sub area Shorne) and Higham Arable Farmland (sub area Thong) LLCAs, along the A2 corridor, at Gravelhill Wood and within the Shorne and Ashenbank Woods SSSI between the A2 and HS1 (including some ancient woodland) • Further reduction in relative tranquillity experienced along the A2 corridor	High	Minor adverse	**Moderate adverse**
West Kent Downs (sub area Shorne) • Large-scale construction activity along the southern and western edges of the LLCA • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Loss of woodland along the A2 corridor and within the Shorne and Ashenbank Woods SSSI between the A2 and HS1 (including some ancient woodland)	Very high	Major adverse	**Very large adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Vegetation loss within Gravelhill Wood in Higham Arable Farmland (sub area Thong) LLCA • Loss of or change to existing false cutting earth bunds • Further reduction in relative tranquillity experienced along the A2 corridor			
West Kent Downs LCA 1A (overview comprising the sub areas of Shorne and Cobham) • As described above for sub areas Shorne and Cobham	Very high	Moderate adverse	**Large adverse**

7.6.11 For the assessment of traffic and noise effects on the wider Kent Downs AONB beyond the study area for this chapter, refer to Appendix 7.11 (Application Document 6.3).

The setting of the Kent Downs AONB and Green Belt

7.6.12 Table 2.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment for LLCAs within the setting of the Kent Downs AONB and Green Belt during construction. Table 7.19 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction within the Shorne Wooded Slopes LLCA, Higham Arable Farmland (sub area Gadshill) LLCA, Gravesend Southern Fringe LLCA, Shorne and Higham Marshes LLCA or Mucking Marshes LLCA, these LLCAs are excluded from Table 7.19.

Table 7.19 Schedule of landscape effects on LLCAs within the setting of the Kent Downs AONB during construction

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
Higham Arable Farmland (sub area Thong) • Large-scale construction activity for the new M2/A2/A122 Lower Thames Crossing junction • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable land • Substantial change to the existing flat to gently undulating landform • Partial loss of mature woodland within the A2 corridor and Claylane Wood, and loss of Gravelhill Wood (including some ancient woodland)	High	Major adverse	**Very large adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Further reduction in relative tranquillity experienced along the A2 corridor and edge of Gravesend			
Istead Arable Farmlands • Large-scale construction activity to the north, mostly within Higham Arable Farmland (sub area Thong) • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Vegetation loss to the north within Claylane Wood and Gravelhill Wood, and along the A2 corridor (including some ancient woodland) • Further reduction in relative tranquillity experienced along the A2 corridor	Medium	Moderate adverse	**Moderate adverse**
Higham Arable Farmland (sub area Chalk) • Large-scale construction activity for the South Portal • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable land • Substantial change to the existing gently undulating landform • A reduction in relative tranquillity due to extensive construction activity	High	Major adverse	**Very large adverse**
Tilbury Marshes • Conspicuous construction activity, particularly in the northern tunnel entrance compound • Loss of some scrub and hedgerow vegetation • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable and pastoral land • Substantial change to the flat and open landform • Further reduction in relative tranquillity	Low	Major adverse	**Moderate adverse**
Chadwell Escarpment Urban Fringe • Conspicuous construction activity in the urban fringe landscape • Loss of some hedgerow vegetation • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Small-scale loss of arable land	Medium	Moderate adverse	**Moderate adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Change to the existing landform at the eastern end of the escarpment • Loss of woodland/scrub at Tilbury Viaduct • Further reduction in relative tranquillity experienced due to construction activity			

Green Belt/areas beyond the setting of the Kent Downs AONB

7.6.13 Table 2.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment for LLCAs within the Green Belt but beyond the setting of the Kent Downs AONB during construction. Table 7.20 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction within the Dartford and Gravesend Fringe LLCA, Linford/Buckingham Hill Urban Fringe LLCA or Brentwood Wooded Hills LLCA, these LLCAs are excluded from Table 7.20.

Table 7.20 Schedule of landscape effects on LLCAs beyond the setting of the Kent Downs AONB within Green Belt during construction

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
West Tilbury Urban Fringe • Conspicuous construction activity within the urban fringe landscape • Loss of hedgerows • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable farmland • Change to the existing flat landform • Localised damage to the character of Hoford Road Protected Lane • Loss of woodland adjoining Readmans Industrial Estate • A further reduction in relative tranquillity due to construction activity	Medium	Major adverse	**Large adverse**
White Croft/Orsett Heath Urban Fringe • Conspicuous construction activity • Loss of hedgerows • Loss of roadside planting around the A13/A1089/A122 Lower Thames Crossing junction • Limited perceived change in the night-time environment as a result of construction activity and construction light sources • Substantial loss of arable farmland	Medium	Major adverse	**Large adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Change to the existing gently undulating landform • A further reduction in relative tranquillity due to construction activity			
Orsett Lowland Farmland • Conspicuous construction activity within the urban fringe landscape • Loss of roadside vegetation, including at the A13/A1089/A122 Lower Thames Crossing junction • Limited perceived change in the night-time environment as a result of construction activity and construction light sources, experienced in the context of existing lighting along the A13 • Change to the flat lowland landform • Substantial loss of pasture and arable farmland • A further reduction in relative tranquillity due to construction activity, experienced in the context of the existing A13 corridor	Medium	Moderate adverse	**Moderate adverse**
Thurrock Reclaimed Fen (sub area Mardyke) • Conspicuous construction activity within the rural and former fenland landscape • Loss of hedgerows • Perceived change in the night-time environment, experienced within a largely dark area • Substantial loss of arable farmland • Loss of tree belt along the Mardyke and partial loss of The Wilderness woodland block • Change to the existing flat, low-lying landform of the former fen landscape • A reduction in the level of tranquillity due to construction activity, particularly within the former fen landscape	High	Major adverse	**Large adverse**
Thurrock Reclaimed Fen (sub area Thames Chase) • Conspicuous construction activity within the context of the M25 corridor • Loss of roadside screen planting • Damage to the character of the Thames Chase Forest Centre and adjoining Community Forest area due to the loss of effective roadside woodland screen	Medium	Moderate adverse	**Moderate adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Limited perceived change in the night-time environment as a result of construction activity and construction light sources • A further reduction in relative tranquillity experienced along the M25 corridor			
Belhus Lowland Quarry Farmland • Conspicuous construction activity within the rural landscape, although partially in the context of the M25 corridor • Loss of woodland screening along the M25 • Limited perceived change in the night-time environment beyond the M25 corridor • Loss of farmland associated with the highway and earthwork construction • Change to the existing gently rolling landform • A reduction in relative tranquillity experienced beyond the M25 corridor	Medium	Moderate adverse	**Moderate adverse**

Visual amenity

7.6.14 The assessment of impact on visual amenity has been sub-divided into two geographical areas: south of the River Thames and north of the River Thames. The detailed visual impact assessment is set out in Appendix 7.10: Schedule of Visual Effects (Application Document 6.3), with the significant effects summarised in the following text. This includes the assessment on visual receptors from Representative Viewpoints and assessment of visual effects on other individual receptors and groups of receptors identified within the refined study area.

South of the River Thames

Representative Viewpoints

7.6.15 Table 2.1 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) provides a detailed assessment of all Representative Viewpoints located to the south of the River Thames during construction. Table 7.21 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction on visual receptors from Representative Viewpoints S-01, S-02, S-06, S-07, S-10, S-21, S-22, S-26, S-36, S38a, S38b, S-39 or N-Dep-RV-01 to 09, these viewpoints are excluded from Table 7.21.

7.6.16 Representative Viewpoints S-23, S-24, S-25, S-27, S-28, S-31, S-33 and S-34 have not been assessed, as the associated footway/cycleway and PRoWs would be temporarily or permanently closed during construction.

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Other individual and grouped visual receptors

7.6.17 Table 2.2 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) sets out the assessment conclusions for all individual and groups of visual receptors located within the study area to the south of the River Thames. Table 7.22 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above).

The locations of Representative Viewpoints and other individual receptors and groups of receptors within the refined study area are shown on Figure 7.16 (Application Document 6.2).

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Table 7.21 Schedule of visual effects on Representative Viewpoints south of the River Thames during construction

Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
S-03	View from the Kent Downs AONB on footpath NS161, located north of Park Pale, east of Shorne Woods Country Park.	Very high	Moderate	**Large adverse**
S-04	View from the Kent Downs AONB on Park Pale, part of the NCN Route 177 and Darnley Trail recreational route adjacent to Park Pale overbridge. Also represents views from the end of footpath NS161.	High	Moderate	**Large adverse**
S-05	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177 and Darnley Trail recreational route.	High	Major	**Very large adverse**
S-05a	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177 and Darnley Trail recreational route.	High	Major	**Very large adverse**
S-08	View from the Kent Downs AONB on footpath NS179, within Cobham Hall Grade II* Registered Park and Garden.	High	Moderate	**Large adverse**
S-09	View from the Kent Downs AONB on Park Pale/Darnley Trail/NCN Route 177, adjacent to Brewers Wood, part of Shorne Woods Country Park.	High	Moderate	**Moderate adverse**
S-11	View from the Kent Downs AONB on footpath NS179 within Cobham Hall Grade II* Registered Park and Garden.	Very high	Moderate	**Large adverse**
S-12	View from the Kent Downs AONB on Brewers Road/Luddesdown Trek/NCN Route 177, adjacent to Brewers Wood/Shorne Wood, part of Shorne Woods Country Park.	High	Moderate	**Large adverse**
S-13	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 eastbound carriageway.	High	Major	**Very large adverse**
S-14	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 westbound carriageway/HS1.	High	Major	**Very large adverse**
S-15	View from the Kent Downs AONB on footpath NS178 located adjacent to the Halfpence Lane roundabout.	High	Moderate	**Moderate adverse**

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Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
S-16	View from the Kent Downs AONB and Randall Heath Woods, on a permissive path within Shorne Woods Country Park.	Very high	Minor	**Moderate adverse**
S-17	View from the Kent Downs AONB on the NCN Route 177/Timeball and Telegraph Trail Long Distance Path, on Thong Lane adjacent to the Inn on the Lake Hotel.	High	Major	**Very large adverse**
S-18	View from the Kent Downs AONB on the HS1 green bridge and Timeball and Telegraph Trail Long Distance Path.	Very high	Major	**Very large adverse**
S-19	View from footpath NS177, located within Jeskyns Community Woodland. Also represents views from footpath NS177A.	High	Moderate	**Moderate adverse**
S-20	View from a recreational permissive route within Jeskyns Community Woodland.	High	Moderate	**Large adverse**
S-20a	View from Jeskyns Community Woodland. Also represents views from northern end of footpath NS177.	High	Major	**Large adverse**
S-29	View from the Kent Downs AONB on Shorne Ifield Road located on the northern edge of Shorne Woods Country Park.	High	Major	**Very large adverse**
S-30	View from Thong Lane in the eastern urban edge of Gravesend (Riverview Park) adjacent to the entrance of Southern Valley Golf Club.	Moderate	Major	**Large adverse**
S-32	View from elevated location along footpath NS316 located immediately west of Shorne Hill, with views to the Kent Downs AONB. Also represents views from footpath NS163.	Moderate	Major	**Large adverse**
S-35 (& S-(CH)03a)	View from A226 Gravesend Road near Chalk.	Low	Major	**Moderate adverse**
S-37 (& S-(CH)03b)	View from NCN Route 1/footpath NG2/NG4 adjacent to former Thames and Medway Canal.	High	Moderate	**Moderate adverse**

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7.6.18 Within Table 7.22, the S01, S02, etc., codes within the visual receptor references refer to the Project section numbers that are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2).

Table 7.22 Schedule of visual effects on visual receptors south of the River Thames during construction

Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
Residential properties				
VR-S01-R-005	Residential properties on Squires Close and Sharfleet Drive, Strood	High	Moderate	**Moderate adverse**
VR-S01-R-006	Residential properties on Old Watling Street, Strood	High	Moderate	**Moderate adverse**
VR-S02-R-001	Residential properties along Thong Lane, Riverview Park	High	Major	**Large adverse**
VR-S02-R-015	Residential properties along The Glades, southern edge of Gravesend	High	Minor	**Moderate adverse**
VR-S02-R-016	Residential properties along Mackenzie Way and Valley Drive (west), southern edge of Gravesend	High	Moderate	**Moderate adverse**
VR-S02-R-017	Residential properties along Valley Drive (east) and northern part of Sheldon Heights, southern edge of Gravesend	High	Moderate	**Moderate adverse**
VR-S02-R-018	Residential properties along southern part of Sheldon Heights, southern edge of Gravesend	High	Major	**Large adverse**
VR-S02-R-020	Residential properties along Davy's Place, eastern edge of Gravesend	High	Major	**Very large adverse**
VR-S02-R-021	Residential properties along eastern side of Fairfields, eastern edge of Gravesend	High	Moderate	**Large adverse**
VR-S02-R-022	Residential properties along Astra Drive, Gazelle Glade, Glenrosa Gardens and Genesta Glade, eastern edge of Gravesend	High	Major	**Very large adverse**
VR-S02-R-024	Thong Mead, south of Thong village	Moderate	Major	**Large adverse**
VR-S02-R-025	Thong Lodge, south of Thong village	Moderate	Moderate	**Moderate adverse**
VR-S02-R-026	Residential properties on Thong Lane in Thong village (western side)	High	Major	**Large adverse**
VR-S02-R-027	Residential properties on Thong Lane in Thong village (north-western side)	High	Major	**Very large**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
				adverse
VR-S02-R-028	Hartshill Bungalow, Thong Lane	High	Major	**Very large adverse**
VR-S02-R-030	Residential properties along Wykeham Close and Calderwood, eastern edge of Gravesend	High	Moderate	**Moderate adverse**
VR-S02-R-032	Residential properties along the west side of Davy's Place, eastern edge of Gravesend	High	Moderate	**Moderate adverse**
VR-S03-R-002	Residential properties along Thong Lane to the north and north-west of Cascades Leisure Centre, eastern edge of Gravesend	High	Moderate	**Moderate adverse**
VR-S03-R-003	222 to 232 Thong Lane	High	Major	**Large adverse**
VR-S03-R-004	Residential properties along eastern side of Thong Lane south of the A226, eastern edge of Gravesend	High	Major	**Large adverse**
VR-S03-R-005	Residential properties on Vicarage Lane (southern side), Chalk	High	Moderate	**Moderate adverse**
VR-S03-R-007	Residential properties along Chalk Road (eastern end), Rochester Road, Lisle Close, Beckley Close and Filborough Way, Chalk	High	Moderate	**Moderate adverse**
VR-S03-R-009	Residential properties along the west side of Crown Green, Shorne	High	Moderate	**Moderate adverse**
VR-S03-R-010	Residential properties along the west side of Thong Lane and along Rochester Road	High	Moderate	**Moderate adverse**
VR-S03-R-012	Residential properties along Shorne Ifield Road, south-west of Shorne, including Baynards Cottage	Moderate	Major	**Moderate adverse**
VR-S03-R-013	Residential properties along Shorne Ifield Road, south-west of Shorne, including Ifield Place, 1–5 Ifield Farm and Ifield Farm	Moderate	Major	**Large adverse**
VR-S03-R-016	Midfields, A226 Gravesend Road	Moderate	Moderate	**Moderate adverse**
VR-S03-R-019	Residential properties along the north-east of A226 Gravesend Road (near footpath NS163A)	Moderate	Moderate	**Moderate adverse**
VR-S03-R-020	17 and 18 Church Lane, east of Chalk	Moderate	Moderate	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S03-R-021	13, 14, 15, 16, 24 and 25 Church Lane, east of Chalk	Moderate	Moderate	**Moderate adverse**
VR-S03-R-022	19 and 20 Church Lane, East Court Manor and East Court Farm, east of Chalk	Moderate	Moderate	**Moderate adverse**
VR-S03-R-023	East Court Cottages and Little Filborough, Lower Higham Road (including property opposite East Court Cottages on Lower Higham Road), east of Chalk	Moderate	Moderate	**Moderate adverse**
VR-S03-R-024	Filborough Farm and Filborough Farm Barn, Lower Higham Road, east of Chalk	Moderate	Moderate	**Moderate adverse**
VR-S03-R-030	Residential properties at the junction of Castle Lane and A226 Gravesend Road	High	Moderate	**Moderate adverse**
VR-S03-R-031	Residential properties along west and east of Castle Lane, eastern edge of Chalk	High	Moderate	**Moderate adverse**
VR-S03-R-035	Polperro, A226 Rochester Road	High	Major	**Very large adverse**
VR-S03-R-036	View Point Place traveller site, A226 Rochester Road, south-east of Chalk	High	Major	**Very large adverse**
VR-S03-R-037	Horseshoe Meadow traveller site, A226 Rochester Road, south-east of Chalk	High	Major	**Large adverse**
Recreational receptors (route)				
VR-S01-RL-003	Footpath NS182	Very high	Minor	**Moderate adverse**
VR-S01-RL-004	Footpath NS179	Very high	Minor	**Moderate adverse**
VR-S02-RL-004	Central section of footpath NS175A	Moderate	Moderate	**Moderate adverse**
VR-S02-RL-006	Northern end of footpath NS175A and footpath NS365	Moderate	Moderate	**Moderate adverse**
VR-S02-RL-008	Footpath NS175 and footpath NS176	Moderate	Moderate	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S02-RL-013	Northern end of Byway Open to All Traffic NS195	Very high	Minor	**Moderate adverse**
VR-S02-RL-017	Footpath NS167 east of Thong village	Moderate	Moderate	**Moderate adverse**
VR-S02-RL-018	Footpath NS167	Very high	Minor	**Moderate adverse**
VR-S02-RL-019	Footpath NS170	Very high	Minor	**Moderate adverse**
VR-S03-RL-001	Footpath NS355	Very high	Minor	**Moderate adverse**
VR-S03-RL-005	Footpath NS164 and footpath NS163A	Moderate	Major	**Large adverse**
VR-S03-RL-006	Footpath NS163 and footpath NS165	Moderate	Major	**Large adverse**
VR-S03-RL-007	Southern end of footpath NS316	Moderate	Major	**Large adverse**
Recreational receptors (area)				
VR-S01-RA-002	Shorne Woods Country Park, Brewers Road, Shorne	Very high	Minor	**Moderate adverse**
VR-S02-RA-001	Jeskyns Community Woodland, Henhurst Road, Gravesend	High	Moderate	**Large adverse**
VR-S02-RA-003	Green space on Mackenzie Way, southern edge of Gravesend	Moderate	Moderate	**Moderate adverse**
VR-S02-RA-005	Shorne Woods Country Park, Brewers Road, Shorne	Very high	Minor	**Moderate adverse**
Transport receptors (route)				
VR-S01-T-002	Park Pale	Moderate	Moderate	**Moderate adverse**
VR-S01-T-003	Brewers Road	Moderate	Major	**Large adverse**
VR-S02-T-001	HS1 green bridge	Moderate	Major	**Large adverse**
VR-S02-T-002	The northern end of Henhurst Road	Moderate	Moderate	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S02-T-005	Thong Lane near the A2	Moderate	Major	**Large adverse**
VR-S02-T-007	Shorne Ifield Road (western end)	Moderate	Moderate	**Moderate adverse**
VR-S03-T-001	Thong Lane between Cascades Leisure Centre and Rochester Road	Moderate	Moderate	**Moderate adverse**
VR-S03-T-003	Church Lane, Chalk	Moderate	Moderate	**Moderate adverse**
VR-S03-T-004	Lower Higham Road	Moderate	Moderate	**Moderate adverse**
Other receptors				
VR-S02-O-001	The Inn on the Lake, Watling Street	Moderate	Major	**Large adverse**
VR-S02-O-005	Premier Inn, Best Western and The George public house, Hever Court Road, Gravesend	Moderate	Moderate	**Moderate adverse**
VR-S03-O-001	Thames View Crematorium, Gravesend Road, Chalk	Moderate	Moderate	**Moderate adverse**

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North of the River Thames

Representative Viewpoints

7.6.19 Table 2.3 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) provides a detailed assessment of all Representative Viewpoints located to the north of the River Thames. Table 7.23 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during construction on visual receptors from Representative Viewpoints N-02, N-10, N-16, N-30, N-34, N-37, N-40, N43, N-44, N-45, N-46, N-47 or N-Dep-RV-10 to 14, these are excluded from Table 7.23.

Other individual and grouped visual receptors

7.6.20 Table 2.4 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) sets out the assessment conclusions for all individual and groups of visual receptors located within the study area to the north of the River Thames. Table 7.24 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above).

7.6.21 The locations of Representative Viewpoints and other individual receptors and groups of receptors within the refined study area are shown on Figure 7.16 (Application Document 6.2).

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Table 7.23 Schedule of visual effects on Representative Viewpoints north of the River Thames during construction

Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Visual sensitivity	Magnitude of visual effect	Significance of effect
N-01	View from Grade I listed Tilbury Fort adjacent to NCN Route 13 and footpath 146/Thames Estuary Path/Two Forts Way	Very high	Minor	**Moderate adverse**
N-03	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13.	High	Major	**Large adverse**
N-04	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13.	High	Major	**Large adverse**
N-05 (& N-(CH)09)	View from Coalhouse Fort Scheduled Monument, adjacent to Two Forts Way Coastal Path/bridleway 187 and NCN Route 13, looking towards the Kent Downs AONB.	Very high	Moderate	**Large adverse**
N-06	View from footpath 200 adjacent to Bowaters Farm.	Moderate	Major	**Moderate adverse**
N-07	View from bridleway 58 (off Love Lane).	Moderate	Major	**Large adverse**
N-08	View from Low Street Lane adjacent to cluster of rural residential properties.	Moderate	Major	**Large adverse**
N-09	View from footpath 67 (off Blue Anchor Lane) adjacent to Holford Farm.	Moderate	Major	**Large adverse**
N-11	View from junction of bridleway 63 and footpath 66 (off Muckingford Road).	Moderate	Major	**Large adverse**
N-12	View from residential properties in East Tilbury (off Beechcroft Avenue).	High	Major	**Large adverse**
N-13	View from edge of public open space between Linford and East Tilbury (off Muckingford Road).	Moderate	Major	**Moderate adverse**
N-14	View from Hoford Road Protected Lane.	Moderate	Moderate	**Moderate adverse**

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Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Visual sensitivity	Magnitude of visual effect	Significance of effect
N-15	View from Hoford Road Protected Lane. Also represents views from footpath 64.	Moderate	Moderate	**Moderate adverse**
N-17	View from footpath 45 located within Orsett Golf Club.	Moderate	Moderate	**Moderate adverse**
N-18	View from footpath 78 on the north-east edge of Chadwell St Mary.	Moderate	Moderate	**Moderate adverse**
N-19	View from residential properties at Orsett Heath/Chadwell St Mary.	High	Major	**Large adverse**
N-20	View from Hornsby Lane adjacent to Heath Place (Grade II listed building).	Moderate	Major	**Large adverse**
N-21	View from the junction of Hornsby Lane/A1013 Stanford Road.	Moderate	Major	**Large adverse**
N-22	View from A1013 Stanford Road on the A1089 overbridge (northern side).	Low	Major	**Moderate adverse**
N-23	View from Grays urban edge (off Long Lane).	High	Moderate	**Large adverse**
N-24	View from residential properties on B188 Baker Street.	High	Major	**Large adverse**
N-25	View from the intersection of footpath 93, footpath 96 and bridleway 206, off Mill Lane, on southern urban edge of Orsett. Also represents views from footpaths 82 and 94.	Moderate	Major	**Large adverse**
N-26	View from Stifford Clays Road.	Moderate	Moderate	**Moderate adverse**
N-27	View from bridleway 161 adjacent to junction of Green Lane/Stifford Clays Road.	Moderate	Moderate	**Moderate adverse**
N-28	View from footpath 90 at the junction of Green Lane/Fen Lane.	Moderate	Major	**Large adverse**

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Viewpoint reference (Note: (CH) denotes cultural heritage viewpoint)	Description and view direction	Visual sensitivity	Magnitude of visual effect	Significance of effect
N-29	View from bridleway 219 located on the Mardyke Way, east of Grangewaters outdoor education centre.	High	Moderate	**Moderate adverse**
N-29a	View from bridleway 219 located on the Mardyke Way on Orsett Fen, open access land.	High	Major	**Very large adverse**
N-31	View from footpath 90 on Orsett Fen (east of Hobletts residential property).	Moderate	Moderate	**Moderate adverse**
N-32	View from bridleway 219 located on the Mardyke Way on Orsett Fen.	High	Major	**Very large adverse**
N-33	View from intersection of footpaths 89 and 90 at Bulphan Fen (off Harrow Lane). Also represents views from footpath 159.	Moderate	Moderate	**Moderate adverse**
N-35	View from footpath 136 located on Hall Lane, west of South Ockendon Hall.	Moderate	Moderate	**Moderate adverse**
N-36	View from footpath 135 off B186 North Road.	Moderate	Major	**Large adverse**
N-38	View from intersection of footpaths 253 and 254 in North Ockendon Conservation Area. Also represents views from footpath 252.	Moderate	Major	**Moderate adverse**
N-39	View from footpath 231 near St Mary Magdalene Church, in North Ockendon Conservation Area.	Moderate	Moderate	**Moderate adverse**
N-41	View from adjacent to residential properties, including Cranham Place on B1421, Ockendon Road.	Moderate	Major	**Moderate adverse**
N-42	View from permissive path within Thames Chase Forest Centre.	High	Major	**Large adverse**

7.6.22 Within Table 7.24, the ‘S09’, ‘S10’, etc., codes within the visual receptor references refer to the Project section numbers that are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2).

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Table 7.24 Schedule of visual effects on visual receptors north of the River Thames during construction

Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
Residential properties				
VR-S09-R-004	Orchard House and residential property at Orchard Stables, Love Lane, south of East Tilbury	Moderate	Moderate	**Moderate adverse**
VR-S09-R-005	Goshems Farm, Pleasant View and Willows, Station Road, south of East Tilbury	Moderate	Major	**Large adverse**
VR-S09-R-006	Buckland and Bowaters Farm, off Station Road, south-west of East Tilbury	Moderate	Moderate	**Moderate adverse**
VR-S09-R-007	1 and 2 Gravelpit Farm, Station Road, south-west of East Tilbury	Moderate	Major	**Large adverse**
VR-S09-R-013	Properties opposite the end of Low Street Lane including Walnut Tree Farm	Moderate	Major	**Large adverse**
VR-S10-R-001	Residential properties along Bata Avenue, Shearwater Avenue, Pipit Close, Pintail Close, Lapwing Close, Turnstone Close, Sanderling Close and Sandpiper Close, western edge of East Tilbury	High	Major	**Large adverse**
VR-S10-R-002	Residential properties along Muckingford Road in East Tilbury	High	Major	**Moderate adverse**
VR-S10-R-003	Residential properties along Muckingford Road including Ash Lea Farm, west of East Tilbury	Moderate	Major	**Large adverse**
VR-S10-R-004	Residential properties along east side of Blue Anchor Lane including Holford House, Holford Farm Cottage and Blue Anchor Cottage	Moderate	Moderate	**Moderate adverse**
VR-S10-R-006	Residential properties at the junction of Muckingford Road and Blue Anchor Lane	Moderate	Moderate	**Moderate adverse**
VR-S10-R-007	Residential properties at the southern end of Hoford Road	Moderate	Moderate	**Moderate adverse**
VR-S10-R-008	Juorei, Muckingford Road	Moderate	Major	**Large adverse**
VR-S10-R-009	Becksland, Muckingford Road	Moderate	Major	**Large adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S10-R-012	Residential properties along the southern side of Lower Crescent, southern edge of Linford	High	Moderate	**Moderate adverse**
VR-S10-R-016	The White House, Manor Farm and nearby residential properties along Blue Anchor Lane, eastern edge of West Tilbury	Moderate	Moderate	**Moderate adverse**
VR-S10-R-018	High House, High House Lane	Moderate	Moderate	**Moderate adverse**
VR-S10-R-022	Residential properties along the northern end of Cole Avenue and St Francis Way, north-eastern edge of Chadwell St Mary	High	Moderate	**Moderate adverse**
VR-S10-R-026	Residential properties along Haywood Place and Courtney Road, north-eastern edge of Chadwell St Mary	High	Major	**Large adverse**
VR-S10-R-027	High-rise flats on Godman Road, northern edge of Chadwell St Mary	High	Major	**Large adverse**
VR-S10-R-028	Residential properties along Alexandra Close, north-eastern edge of Chadwell St Mary	High	Major	**Large adverse**
VR-S10-R-029	Brook Farm Cottages, High House Lane	Moderate	Major	**Large adverse**
VR-S10-R-032	95 to 129 Godman Road, northern edge of Chadwell St Mary	High	Moderate	**Moderate adverse**
VR-S11-R-003	Baker Street Windmill, western edge of Baker Street	High	Major	**Large adverse**
VR-S11-R-004	Residential properties at Rectory Fields	High	Minor	**Moderate adverse**
VR-S11-R-006	Old Rectory, Fen Lane, north of Baker Street	Moderate	Major	**Large adverse**
VR-S11-R-007	Residential properties along Godman Road, northern side of Cedar Road and eastern side of Barry Close, northern edge of Chadwell St Mary	High	Major	**Large adverse**
VR-S11-R-008	Residential properties along the south side of Greyhound Lane, northern edge of Chadwell St Mary	High	Moderate	**Moderate adverse**
VR-S11-R-012	Rose Cottage, Hornsby Lane	Moderate	Major	**Large adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S11-R-013	Residential properties along Gowers Lane, along the northern end of Squirrel's Chase and at the junction of Gowers Lane and Hornsby Lane, Orsett Heath	High	Major	**Large adverse**
VR-S11-R-015	202 to 224 Heath Road, north of Orsett Heath	Moderate	Major	**Large adverse**
VR-S11-R-016	242, 246 and 246a Heath Road, north of Orsett Heath	Moderate	Major	**Large adverse**
VR-S11-R-019	Heath Place, Hornsby Lane	Moderate	Major	**Large adverse**
VR-S11-R-020	The Whitecroft (also White Crofts on OS mapping), Stanford Road	Moderate	Major	**Large adverse**
VR-S11-R-022	Grey Goose Farm, Grey Goose Farm Cottage and Little Wellhouse Farm, Blackshots Lane	Moderate	Moderate	**Moderate adverse**
VR-S11-R-023	Residential properties along Kerry Road, Long Lane, Foxhills Road, Rushley Close, Brookman's Avenue, south side of Fairfield Avenue and Ashley Gardens, eastern edge of Grays	High	Moderate	**Moderate adverse**
VR-S11-R-024	Residential properties along Milford Road, eastern edge of Grays	High	Moderate	**Moderate adverse**
VR-S11-R-026	24 to 44 Stanford Road and residential properties along Masefield Road and Buxton Road, eastern edge of Grays	High	Moderate	**Moderate adverse**
VR-S11-R-030	Residential properties along the south of Stifford Clays Road and western side of Baker Street	High	Moderate	**Large adverse**
VR-S11-R-031	Residential properties along the eastern side of Baker Street	High	Moderate	**Moderate adverse**
VR-S11-R-032	Residential properties along the north of Stifford Clays Road and west of Fen Lane, northern edge of Baker Street	High	Major	**Large adverse**
VR-S11-R-035	Hollycrest House and Mill House, Mill Lane, western edge of Orsett	Moderate	Moderate	**Moderate adverse**
VR-S11-R-039	Springfield Farm, Stifford Clays Road, west of Baker Street	Moderate	Major	**Large adverse**
VR-S11-R-042	1 and 2 Potash Cottages	Moderate	Major	**Large adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S11-R-043	Five Chimney Cottages, A1013 Stanford Road	Moderate	Major	**Large adverse**
VR-S12-R-001	Home Farm Cottage on Ockendon Road and Redcrofts North Road, south-east of North Ockendon	Moderate	Moderate	**Moderate adverse**
VR-S12-R-002	Residential properties along the northern side of Cheelson Road, northern edge of South Ockendon	High	Major	**Large adverse**
VR-S12-R-003	Residential properties along the southern side of Cheelson Road, northern edge of South Ockendon	High	Moderate	**Moderate adverse**
VR-S12-R-005	Fen Farm and Fen Farm Cottages, Fen Lane	Moderate	Moderate	**Moderate adverse**
VR-S12-R-007	Judds Farm and Judds House, Harrow Road	Moderate	Moderate	**Moderate adverse**
VR-S12-R-008	The Downes, Elms Lane	Moderate	Moderate	**Moderate adverse**
VR-S12-R-010	Hobletts	Moderate	Major	**Large adverse**
VR-S12-R-012	Fen Cottage, Fen Lane	Moderate	Moderate	**Moderate adverse**
VR-S12-R-013	Residential properties along the east side of North Road, northern edge of South Ockendon	High	Moderate	**Moderate adverse**
VR-S12-R-014	The Evergreens and nearby properties along North Road	Moderate	Major	**Large adverse**
VR-S12-R-015	South Ockendon Hall, Hall Lane	Moderate	Moderate	**Moderate adverse**
VR-S13-R-010	Residential properties along southern end of Church Lane in North Ockendon	Moderate	Moderate	**Moderate adverse**
VR-S13-R-012	Railway Sidings, Ockendon Road	Moderate	Major	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S14-R-003	Residential properties at Laburnham Stables, off Laburnham Gardens	High	Moderate	**Moderate adverse**
VR-S14-R-005	Franks Farm off St Marys Lane	Moderate	Major	**Large adverse**
VR-S14-R-016	Tyas Stud Farm (including static caravans) and Latchford Farm, St Marys Lane	Moderate	Moderate	**Moderate adverse**
VR-S14-R-017	Residential property at Wyngray Farm and static caravans at Fairoak, St Marys Lane, Upminster	Moderate	Moderate	**Moderate adverse**
Recreational receptors (route)				
VR-S09-RL-002	Footpath 146 (Two Forts Way Coastal Path/NCN Route 13)	High	Moderate	**Moderate adverse**
VR-S09-RL-004	Footpath 200	Moderate	Moderate	**Moderate adverse**
VR-S09-RL-005	Footpath 200	Moderate	Major	**Large adverse**
VR-S09-RL-006	Footpath 200	Moderate	Major	**Large adverse**
VR-S09-RL-009	Low Street Lane Route	Moderate	Major	**Large adverse**
VR-S10-RL-001	Coal Road/Bridleway 58	Moderate	Major	**Large adverse**
VR-S10-RL-002	Footpath 61 and footpath 60	Moderate	Major	**Large adverse**
VR-S10-RL-008	Footpath 106 and footpath 105	Moderate	Major	**Large adverse**
VR-S10-RL-009	Footpath 95	Moderate	Major	**Large adverse**
VR-S10-RL-010	Footpath 79	Moderate	Major	**Large adverse**
VR-S10-RL-011	Footpath 95 and footpath 107	Moderate	Major	**Large adverse**
VR-S10-RL-013	Footpath 104	Moderate	Major	**Large adverse**
VR-S10-RL-014	Hoford Road Route (near Tarmac Linford Blocks Plant)	Moderate	Moderate	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S11-RL-003	Footpath 82, footpath 93 and footpath 94	Moderate	Major	**Large adverse**
VR-S12-RL-001	Footpath 134	Moderate	Moderate	**Moderate adverse**
VR-S12-RL-002	Footpath 136	Moderate	Major	**Large adverse**
VR-S12-RL-003	Footpath 15	Moderate	Moderate	**Moderate adverse**
VR-S12-RL-004	Footpath 136	Moderate	Major	**Large adverse**
VR-S12-RL-005	Footpath 135	Moderate	Major	**Large adverse**
VR-S12-RL-008	Footpath 100	Moderate	Moderate	**Moderate adverse**
VR-S12-RL-009	Footpath 90	Moderate	Major	**Large adverse**
VR-S12-RL-010	Footpath 135	Moderate	Major	**Large adverse**
VR-S12-RL-011	Bridleway 219 (Mardyke Way)	High	Major	**Large adverse**
VR-S13-RL-002	Bridleway 272	Moderate	Moderate	**Moderate adverse**
VR-S13-RL-005	Footpath 230 (within Thames Chase Forest Centre)	High	Major	**Large adverse**
VR-S14-RL-002	Footpath PRoW 272_179	Moderate	Major	**Moderate adverse**
VR-S14-RL-005	Footpath 176	Moderate	Major	**Moderate adverse**
VR-S14-RL-006	Footpath PRoW 272_180 and footpath 177	Moderate	Major	**Moderate adverse**
Recreational receptors (areas)				
VR-S10-RA-001	Green space, Stenning Avenue, East Tilbury	Moderate	Major	**Large adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S10-RA-002	Green space (also known as Wickham Park), St Francis Way, Chadwell St Mary	Moderate	Moderate	**Moderate adverse**
VR-S10-RA-003	Orsett Golf Club, Brentwood Road, Orsett	Moderate	Moderate	**Moderate adverse**
VR-S13-RA-001	Cranham Golf Club, St Marys Lane, Upminster	Moderate	Moderate	**Moderate adverse**
Transport receptors (route)				
VR-S09-T-003	Fort Road north of Tilbury and Coopers Shaw Road	Moderate	Moderate	**Moderate adverse**
VR-S09-T-004	Church Road	Moderate	Moderate	**Moderate adverse**
VR-S09-T-005	Station Road, between Low Street Lane and Readmans Industrial Estate	Moderate	Major	**Large adverse**
VR-S09-T-006	Station Road, Readmans Industrial Estate to Goshems Farm	Moderate	Major	**Large adverse**
VR-S10-T-002	Muckingford Road and Linford Road	Moderate	Major	**Moderate adverse**
VR-S10-T-004	Hoford Road	Moderate	Moderate	**Moderate adverse**
VR-S10-T-006	High House Lane (southern end)	Moderate	Moderate	**Moderate adverse**
VR-S10-T-007	High House Lane (northern end)	Moderate	Major	**Large adverse**
VR-S10-T-008	Brentwood Road, north of Chadwell St Mary	Moderate	Moderate	**Moderate adverse**
VR-S11-T-001	Fen Lane	Moderate	Major	**Large adverse**
VR-S11-T-004	Mill Lane	Moderate	Major	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S11-T-005	Stifford Clays Road (west)	Moderate	Major	**Moderate adverse**
VR-S11-T-006	Green Lane	Moderate	Major	**Large adverse**
VR-S11-T-008	Hornsby Lane, east of Orsett Heath	Moderate	Major	**Large adverse**
VR-S11-T-009	Baker Street	Moderate	Major	**Large adverse**
VR-S11-T-010	Rectory Road	Moderate	Major	**Large adverse**
VR-S11-T-012	Long Lane	Moderate	Major	**Large adverse**
VR-S13-T-005	B1421, Ockendon Road	Moderate	Major	**Moderate adverse**
VR-S13-T-007	Pike Lane	Moderate	Moderate	**Moderate adverse**
VR-S14-T-004	B187, St Marys Lane	Moderate	Moderate	**Moderate adverse**
Other receptors				
VR-S09-O-002	Thames Industrial Park	Low	Major	**Moderate adverse**
VR-S09-O-007	Condovers Scout Activity Centre, Church Road, West Tilbury	Moderate	Moderate	**Moderate adverse**
VR-S11-O-001	Orsett Allotments, Rectory Road, Orsett	Moderate	Major	**Large adverse**
VR-S11-O-003	Treetops School, Buxton Road, Grays	Moderate	Moderate	**Moderate adverse**
VR-S11-O-004	Allotments, Heath Road, Orsett Heath	Moderate	Moderate	**Moderate adverse**
VR-S11-O-009	The Fox	Moderate	Moderate	**Moderate adverse**

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Visual receptor reference	Description	Visual sensitivity	Magnitude of visual effect	Significance of effect
VR-S11-O-010	Willow Garden Day Nursery	Moderate	Major	**Large adverse**
VR-S11-O-011	Orsett Heath Academy, Grays, adjacent to Thurrock Rugby Football Club	Moderate	Moderate	**Moderate adverse**
VR-S12-O-001	Benyon Primary School, West Road, South Ockendon	Moderate	Moderate	**Moderate adverse**
VR-S13-O-002	Nurture Landscapes, Church Lane, North Ockendon	Low	Major	**Moderate adverse**
VR-S14-O-005	In Fitness In Health gym, Franks Farm off St Marys Lane, Upminster	Low	Major	**Moderate adverse**

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Operational phase

7.6.23 Key application documents that have informed the assessment of operational effects reported in this chapter include Figure 2.4: Environmental Masterplan (Application Document 6.2) and Figure 7.19: Photomontages – Winter Year 1 and Summer Year 15 (Application Document 6.2).

Landscape (including landscape and seascape character)

7.6.24 The detailed landscape impact assessment is set out in Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3), with the significant effects summarised in the following text.

7.6.25 The location and extent of landscape character areas is shown on Figure 7.1: National Landscape Character including Seascape and Figure 7.2: Local Landscape Character Areas.

National landscape character

7.6.26 Table 3.1 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment of predicted operation effects for all NCAs. Table 7.25 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during operation within NCA 119: North Downs, NCA 81: Greater Thames Estuary or NCA 111: Northern Thames Basin, these NCAs are excluded from Table 7.25.

Table 7.25 Schedule of landscape effects on NCAs during operation

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
NCA 113: North Kent Plain • Introduction of prominent and uncharacteristic M2/A2/A122 Lower Thames Crossing junction and transport corridor into existing arable farmland • Continued partial absence of mature woodland along the A2 corridor and at Claylane Wood (including some ancient woodland) • Substantial change to the flat to gently undulating landform • Bisection of open landscape character between the urban area of Gravesend and Shorne Woods Country Park • A further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction	High	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Moderate adverse** **Design year** **Slight adverse**

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Marine Character Areas

7.6.27 Table 3.2 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) sets out the predicted landscape effects on MCAs during operation. In conclusion, no likely significant effects (moderate adverse significance of effect and above) are predicted during operation within the South East MCA 18: Thames and Medway Estuaries.

Local Landscape Character Areas

Kent Downs AONB

7.6.28 Table 3.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment on LLCAs during operation. Table 7.26 below provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during operation within the West Kent Downs (sub area Cobham), Hollingbourne Scarp and Vale (sub area Boxley Vale) and Medway Valley (sub area The Eastern Scarp) LLCAs, these LLCAs are excluded from Table 7.26.

Table 7.26 Schedule of landscape effects on LLCAs within the Kent Downs AONB during operation

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
West Kent Downs (sub area Shorne) • Continued partial absence of mature woodland along the A2 corridor (including some ancient woodland), resulting in a perceived increase in the prominence and scale of the A2 corridor and associated highway infrastructure • Greater landscape severance north and south of the modified A2 • Highway infrastructure, structures and moving vehicles at the M2/A2/A122 Lower Thames Crossing junction to the west • Further reduction to relative tranquillity along the southern edge of the LLCA	Very high	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Large adverse** **Design year** **Moderate adverse**
West Kent Downs LCA 1A (comprising the sub areas of Shorne and Cobham) • As described above for sub area Shorne	Very high	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Large adverse** **Design year** **Moderate adverse**
Mid Kent Downs (sub area Bredhurst) • Increase in the amount of woodland within the LLCA and reduction in the prominence of communications masts and overhead lines	High	Opening year Negligible adverse Design year Moderate beneficial	**Opening year** **Neutral** **Design year** **Moderate beneficial**

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7.6.29 For the assessment of traffic and noise effects on the wider Kent Downs AONB beyond the study area for this chapter, please refer to Appendix 7.11 (Application Document 6.3).

The setting of the Kent Downs AONB and Green Belt

7.6.30 Table 3.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment on LLCAs during the operational phase. Table 7.27 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no significant effects are predicted during operation within the Higham Arable Farmland (sub area Gadshill) LLCA, Gravesend Southern Fringe LLCA, Shorne and Higham Marshes LLCA, Mucking Marshes LLCA, Tilbury Marshes LLCA or Chadwell Escarpment Urban Fringe LLCA, these LLCAs are excluded from Table 7.27.

Table 7.27 Schedule of landscape effects on LLCAs within the setting of the Kent Downs AONB during operation

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
Shorne Wooded Slopes • Increase in the amount of woodland within the LLCA and, in some instances, reduction in the prominence of telegraph poles and surrounding built form within Shorne and Higham	High	Opening year Negligible adverse Design year Moderate beneficial	**Opening year** **Neutral** **Design year** **Moderate beneficial**
Higham Arable Farmland (sub area Thong) • Introduction of prominent and uncharacteristic M2/A2/A122 Lower Thames Crossing junction and associated highway infrastructure into the arable landscape • Continued partial absence of mature woodland along the A2 corridor and Claylane Wood (including some ancient woodland) • Substantial change to the flat to gently undulating landform • Bisection of open landscape character between the urban area of Gravesend and Shorne Woods Country Park • A further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction	High	Opening year Major adverse Design year Major adverse	**Opening year** **Very large adverse** **Design year** **Large adverse**
Istead Arable Farmlands • Continued localised reduction in the wooded backdrop to the north-east	Medium	Opening year Moderate adverse	**Opening year** **Moderate adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• Very limited, further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction		Design year Minor adverse	**Design year** **Slight adverse**
Higham Arable Farmland (sub area Chalk) • Introduction of uncharacteristic transport corridor into the arable landscape • Change to the flat to gently undulating landform • Bisection and partial severance of this LLCA from the urban edge of Gravesend • A reduction in relative tranquillity due to introduction of the new road and associated vehicle traffic and highway infrastructure	High	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Moderate adverse** **Design year** **Slight adverse**

Green Belt/areas beyond the setting of the Kent Downs AONB

7.6.31 Table 3.3 within Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) provides a detailed assessment on LLCAs during operation. Table 7.28 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during operation within the Dartford and Gravesend Fringe LLCA, Linford/Buckingham Hill Urban Fringe LLCA or Brentwood Wooded Hills LLCA, these LLCAs are excluded from Table 7.28.

Table 7.28 Schedule of landscape effects on LLCAs beyond the setting of the Kent Downs AONB within Green Belt during operation

Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
West Tilbury Urban Fringe • Introduction of an uncharacteristic transport corridor into the arable landscape • Change to the existing flat to gently undulating landform • Localised damage to the character of Hoford Road Protected Lane • Continued absence of woodland adjoining Readmans Industrial Estate • A reduction in relative tranquillity due to introduction of the new road and associated vehicle traffic	Medium	Opening year Major adverse Design year Moderate adverse	**Opening year** **Large adverse** **Design year** **Moderate adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
White Croft/Orsett Heath Urban Fringe • Introduction of an uncharacteristic transport corridor into the arable landscape to the south of the A13 • Further localised urbanisation of the landscape due to the expanded A13 junction and corridor to the east • Change to the existing flat to gently undulating landform • A reduction in relative tranquillity due to introduction of the new road and associated vehicle traffic, although this would be in the context of the A13 corridor on the northern margin of the LLCA	Medium	Opening year Major adverse Design year Moderate adverse	**Opening year** **Large adverse** **Design year** **Moderate adverse**
Orsett Lowland Farmland • Further localised urbanisation of the landscape due to the expanded A13 junction within the arable and pastoral landscape • Change to the existing flat lowland landform • A further reduction in relative tranquillity due to introduction of the new road and associated vehicle traffic, although this would be in the context of the A13 corridor in the south of the LLCA	Medium	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Moderate adverse** **Design year** **Slight adverse**
Thurrock Reclaimed Fen (sub area Mardyke) • Introduction of an uncharacteristic transport corridor into the arable landscape • Substantial change in the flat, open, former fen landscape • Continued absence of a tree belt along the Mardyke and part of The Wilderness woodland block • A notable reduction in tranquillity within this relatively remote and open landscape due to introduction of the new road and associated vehicle traffic	High	Opening year Major adverse Design year Major adverse	**Opening year** **Very large adverse** **Design year** **Large adverse**
Thurrock Reclaimed Fen (sub area Thames Chase) • Localised widening of the existing M25 motorway corridor to accommodate the new Project slip roads	Medium	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Moderate adverse** **Design year** **Slight adverse**

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Summary of effects on landscape receptors	Landscape sensitivity	Magnitude and nature of effect	Significance of effect
• A further reduction in relative tranquillity due to the increased prominence of the modified M25 corridor			
Belhus Lowland Quarry Farmland • Introduction of an uncharacteristic transport corridor, associated landform and highway infrastructure into the rural landscape beyond the M25 motorway • Change to the existing gently rolling landform • A further reduction in relative tranquillity due to introduction of the new road and associated vehicle traffic, although this would be in the context of the M25 corridor	Medium	Opening year Moderate adverse Design year Minor adverse	**Opening year** **Moderate adverse** **Design year** **Slight adverse**

Visual amenity

7.6.32 The detailed visual impact assessment is set out in Appendix 7.10: Schedule of Visual Effects (Application Document 6.3), with the significant effects summarised in the following text. This includes the assessment on visual receptors from Representative Viewpoints and assessment of visual effects on other individual receptors and groups of receptors identified within the refined study area.

7.6.33 Figure 7.19 (Application Document 6.2) provides photomontages, illustrating the Project from a selection of Representative Viewpoints at opening year (winter) and design year (summer).

South of the River Thames

Representative Viewpoints

7.6.34 Table 3.1 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) provides the detailed assessment during operation for the Representative Viewpoints located to the south of the River Thames. Table 7.29 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during the operational phase on visual receptors from Representative Viewpoints S-01, S-02, S-06, S-07, S-10, S-15, S-21, S-22, S-26, S-29, S-32, S-34, S-35, S-36, S-37, S-38a, S-38b, S-39, N-Dep-RV-03 to 06, N-Dep-RV-08 or N-Dep-RV-09, these viewpoints are excluded from Table 7.29.

7.6.35 Representative Viewpoint S-23 has not been assessed, as the footway/cycleway in this location would be permanently closed.

Other individual and grouped visual receptors

7.6.36 Table 3.2 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) sets out the assessment conclusions for all individual and groups of visual receptors located within the study area to the south of the River

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Thames. Table 7.30 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above).

7.6.37 The locations of Representative Viewpoints and other individual receptors and groups of receptors within the refined study area are shown on Figure 7.16 (Application Document 6.2).

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Table 7.29 Schedule of visual effects on Representative Viewpoints south of the River Thames during operation

Description and view direction (Note: (CH) denotes cultural heritage viewpoint)		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
S-03	View from the Kent Downs AONB on footpath NS161, located north of Park Pale, east of Shorne Woods Country Park.	Very high	Moderate	Minor	**Large adverse**	**Moderate beneficial**
S-04	View from the Kent Downs AONB on Park Pale, part of the NCN Route 177 and Darnley Trail recreational route adjacent to Park Pale overbridge. Also represents views from the end of footpath NS161.	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
S-05	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177 and Darnley Trail recreational route.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
S-05a	View from the Kent Downs AONB on Park Pale overbridge, part of the NCN Route 177 and Darnley Trail recreational route.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
S-08	View from the Kent Downs AONB on footpath NS179, within Cobham Hall Grade II* Registered Park and Garden.	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-09	View from the Kent Downs AONB on Park Pale/Darnley Trail/NCN Route 177, adjacent to Brewers Wood, part of Shorne Woods Country Park.	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-11	View from the Kent Downs AONB on footpath NS179 within Cobham Hall Grade II* Registered Park and Garden.	Very high	Moderate	Minor	**Large adverse**	**Moderate adverse**
S-12	View from the Kent Downs AONB on Brewers Road/Luddesdown Trek/NCN Route 177, adjacent to Brewers Wood/Shorne Wood, part of Shorne Woods Country Park.	High	Moderate	Minor	**Moderate adverse**	**Slight beneficial**

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Description and view direction (Note: (CH) denotes cultural heritage viewpoint)		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
S-13	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 eastbound carriageway.	High	Major	Minor	**Large adverse**	**Slight beneficial**
S-14	View from the Kent Downs AONB on Brewers Road overbridge and the Luddesdown Trek above the A2 westbound carriageway/HS1.	High	Major	Minor	**Large adverse**	**Slight beneficial**
S-16	View from the Kent Downs AONB and Randall Heath Woods, a permissive path within Shorne Woods Country Park.	Very high	Minor	Negligible	**Moderate adverse**	**Slight adverse**
S-17	View from the Kent Downs AONB on the NCN Route 177/Timeball and Telegraph Trail Long Distance Path, on Thong Lane adjacent to the Inn on the Lake Hotel.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
S-18	View from the Kent Downs AONB on the HS1 green bridge and Timeball and Telegraph Trail Long Distance Path.	Very high	Major	Moderate	**Very large adverse**	**Large adverse**
S-19	View from footpath NS177, located within Jeskyns Community Woodland. Also represents views from footpath NS177A.	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-20	View from a recreational permissive route within Jeskyns Community Woodland.	High	Minor	Negligible	**Moderate adverse**	**Slight adverse**
S-20a	View from Jeskyns Community Woodland. Also represents views from northern end of footpath NS177	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-24	View from footpath NS167 adjacent to Claylane Wood. Also represents views from bridleway NS174.	Moderate	Major	Major	**Large adverse**	**Large adverse**

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Description and view direction (Note: (CH) denotes cultural heritage viewpoint)		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
S-25	View from footpath NS167 at the western edge of Thong village and Thong Conservation Area.	Moderate	Major	Minor	**Large adverse**	**Slight adverse**
S-27	View from footpath NS169, looking towards Shorne Woods and the Kent Downs AONB.	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
S-28 (& S-(CH)01)	View from footpath NS169 adjacent to Gravesend urban edge, looking towards Shorne Woods within the Kent Downs AONB, and St Mary Magdalene Church, Cobham.	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
S-30	View from Thong Lane in the eastern urban edge of Gravesend (Riverview Park) adjacent to the entrance of Southern Valley Golf Club.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-31	View from footpath NG8 located within Southern Valley Golf Club at the urban edge of Gravesend (Riverview Park).	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
S-33	View from an intersection of footpaths NG7, NG8 and NG9, on northern edge of Southern Valley Golf Club.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-Dep-RV-01	View from footpath KT/NS/176. Also represents views from footpath KT/NS/175.	Moderate	Minor	Moderate	**Slight adverse**	**Moderate beneficial**
N-Dep-RV-02	View from footpath KT/NS/168, north-west of Woodlands Lane in Shorne Ridgeway.	Very high	Negligible	Minor	**Neutral**	**Moderate beneficial**
N-Dep-RV-07	View from footpath KH31 and adjacent residential properties along a farm access track off Bell Lane.	Very high for users of footpath KH31	Negligible	Moderate	**Neutral**	**Moderate beneficial**
		Moderate for residents	Negligible	Moderate	**Neutral**	**Moderate beneficial**

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7.6.38 Within Table 7.30, the 'S01', 'S02', etc., codes within the visual receptor references refer to the Project section numbers that are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2).

Table 7.30 Schedule of visual effects on visual receptors south of the River Thames during operation

Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
Residential properties						
VR-S01-R-005	Residential properties on Squires Close and Sharfleet Drive, Strood	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S01-R-006	Residential properties on Old Watling Street, Strood	High	Moderate	No change	**Moderate adverse**	**Neutral**
VR-S02-R-001	Residential properties along Thong Lane, Riverview Park	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S02-R-018	Residential properties along southern part of Sheldon Heights, southern edge of Gravesend	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S02-R-020	Residential properties along Davy's Place, eastern edge of Gravesend	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S02-R-023	Residential properties along Astra Drive, Gazelle Glade, Glenrosa Gardens and Genesta Glade, eastern edge of Gravesend	High	Major	Minor	**Large adverse**	**Slight adverse**
VR-S02-R-024	Thong Mead, south of Thong village	Moderate	Moderate	Minor	**Moderate adverse**	**Slight beneficial**
VR-S02-R-026	Residential properties on Thong Lane in Thong village (western side)	High	Major	Minor	**Large adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S02-R-027	Residential properties on Thong Lane in Thong village (north-western side)	High	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S02-R-028	Hartshill Bungalow, Thong Lane	High	Moderate	Negligible	**Moderate adverse**	**Slight adverse**
VR-S03-R-003	222 to 232 Thong Lane	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S03-R-004	Residential properties along eastern side of Thong Lane south of the A226, eastern edge of Gravesend	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
Recreational receptors (route)						
VR-S02-RL-008	Footpath NS175 and footpath NS176	Moderate	Minor	Moderate	**Slight adverse**	**Moderate beneficial**
VR-S02-RL-018	Footpath NS167	Very high	Minor	Negligible	**Moderate adverse**	**Slight adverse**
Recreational receptors (area)						
VR-S02-RA-001	Jeskyns Community Woodland, Henhurst Road, Gravesend	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S02-RA-005	Shorne Woods Country Park, Brewers Road, Shorne	Very high	Minor	Negligible	**Moderate adverse**	**Slight adverse**
VR-S03-RA-002	Sports fields on Thong Lane, eastern edge of Gravesend	Low	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
Transport receptors (route)						
VR-S01-T-002	Park Pale	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S01-T-003	Brewers Road	Moderate	Major	Minor	**Large adverse**	**Slight beneficial**
VR-S02-T-001	HS1 green bridge	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S02-T-005	Thong Lane near the A2	Moderate	Major	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S02-T-007	Shorne Ifield Road (western end)	Moderate	Moderate	Negligible	**Moderate adverse**	**Neutral**
Other receptors						
VR-S02-O-001	The Inn on the Lake, Watling Street	Moderate	Major	Moderate	**Moderate adverse**	**Moderate adverse**

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North of the River Thames

Representative Viewpoints

7.6.39 Table 3.3 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) provides a detailed assessment during operation for the Representative Viewpoints located to the north of the River Thames. Table 7.31 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above). As no likely significant effects are predicted during the operational phase on visual receptors from Representative Viewpoints N-01, N-02, N-05, N-10, N-16, N-29, N-30, N-33, N-34, N-35, N-37, N-40, N-43, N-44, N-45, N-46, N-47 or N-Dep-RV-11 to 13, these viewpoints are excluded from Table 7.31.

Other individual and grouped visual receptors

7.6.40 Table 3.4 within Appendix 7.10: Schedule of Visual Effects (Application Document 6.3) sets out the assessment conclusions for all individual and groups of visual receptors located within the study area to the north of the River Thames. Table 7.32 provides a summary of those receptors likely to experience significant effects (moderate adverse significance of effect and above).

7.6.41 The locations of Representative Viewpoints and other individual receptors and groups of receptors within the refined study area are shown on Figure 7.16 (Application Document 6.2).

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Table 7.31 Schedule of visual effects on Representative Viewpoints north of the River Thames during operation

Description and view direction		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
N-03	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13.	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-04	View from Two Forts Way Coastal Path/footpath 146 and NCN Route 13.	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-06	View from footpath 200 adjacent to Bowaters Farm.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-07	View from bridleway 58 (off Love Lane).	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-08	View from Low Street Lane adjacent to cluster of rural residential properties.	Moderate	Major	Major	**Large adverse**	**Large adverse**
N-09	View from footpath 67 (off Blue Anchor Lane) adjacent to Holford Farm.	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-11	View from junction of bridleway B63 and footpath 66 (off Muckingford Road).	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-12	View from residential properties in East Tilbury (off Beechcroft Avenue).	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-13	View from edge of public open space between Linford and East Tilbury (off Muckingford Road).	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-14	View from Hoford Road Protected Lane.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-15	View from Hoford Road Protected Lane. Also represents views from footpath FP64.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-17	View from footpath 45 located within Orsett Golf Club.	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate beneficial**

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Description and view direction		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
N-18	View from footpath 78 on the north-east edge of Chadwell St Mary.	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-19	View from residential properties at Orsett Heath/Chadwell St Mary.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
N-20	View from Hornsby Lane adjacent to Heath Place (Grade II listed building).	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
N-21	View from the junction of Hornsby Lane/A1013 Stanford Road.	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
N-22	View from A1013 Stanford Road on the A1089 overbridge (northern side).	Low	Major	Moderate	**Moderate adverse**	**Slight adverse**
N-23	View from Grays urban edge (off Long Lane).	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-24	View from residential properties on B188 Baker Street.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
N-25	View from the intersection of footpath 93, footpath 96 and bridleway 206, off Mill Lane, on southern urban edge of Orsett. Also represents views from footpaths 82 and 94.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-26	View from Stifford Clays Road.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-27	View from bridleway 161 adjacent to junction of Green Lane/Stifford Clays Road.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-28	View from footpath 90 at the junction of Green Lane/Fen Lane.	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**

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Description and view direction		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
N-29a	View from bridleway 219 located on the Mardyke Way on Orsett Fen, open access land.	High	Major	Major	**Very large adverse**	**Very large adverse**
N-31	View from footpath 90 on Orsett Fen (east of Hobletts residential property).	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
N-32	View from bridleway 219 located on the Mardyke Way on Orsett Fen.	High	Major	Major	**Very large adverse**	**Very large adverse**
N-36	View from footpath 135 off B186 North Road.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-38	View from intersection of footpaths 253 and 254 in North Ockendon Conservation Area. Also represents views from footpath 252.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-39	View from footpath 231 near St Mary Magdalene Church, in North Ockendon Conservation Area.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-41	View from adjacent to residential properties, including Cranham Place on B1421, Ockendon Road.	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
N-42	View from permissive path within Thames Chase Forest Centre.	High	Major	Moderate	**Large adverse**	**Moderate adverse**
N-Dep-RV-10	View from footpath PRoW 272_110 west of Great Warley Street.	Moderate	Negligible	Moderate	**Neutral**	**Moderate beneficial**

7.6.42 Within Table 7.32, the ‘S09’, ‘S10’, etc., codes within the visual receptor references refer to the Project section numbers that are shown on Figure 2.4: Environmental Masterplan (Application Document 6.2).

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Table 7.32 Schedule of visual effects on visual receptors north of the River Thames during operation

Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
Residential properties						
VR-S09-R-005	Goshems Farm, Pleasant View and Willows, Station Road, south of East Tilbury	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S09-R-007	1 and 2 Gravelpit Farm, Station Road, south-west of East Tilbury	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S09-R-013	Properties opposite the end of Low Street Lane including Walnut Tree Farm	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-001	Residential properties along Bata Avenue, Shearwater Avenue, Pipit Close, Pintail Close, Lapwing Close, Turnstone Close, Sanderling Close and Sandpiper Close, western edge of East Tilbury	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-R-002	Residential properties along Muckingford Road in East Tilbury	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-003	Residential properties along Muckingford Road including Ash Lea Farm, west of East Tilbury	Moderate	Major	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-004	Residential properties along east side of Blue Anchor Lane including Holford House, Holford Farm Cottage and Blue Anchor Cottage	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-006	Residential properties at the junction of Muckingford Road and Blue Anchor Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S10-R-007	Residential properties at the southern end of Hoford Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-R-009	Juorei, Muckingford Road	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-010	Becksland, Muckingford Road	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-012	Residential properties along the southern side of Lower Crescent, southern edge of Linford	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-R-016	The White House, Manor Farm and nearby residential properties along Blue Anchor Lane, eastern edge of West Tilbury	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-026	Residential properties along Haywood Place and Courtney Road, north-eastern edge of Chadwell St Mary	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-027	High-rise flats on Godman Road, northern edge of Chadwell St Mary	High	Major	Major	**Large adverse**	**Large adverse**
VR-S10-R-028	Residential properties along Alexandra Close, north-eastern edge of Chadwell St Mary	High	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-R-029	Brook Farm Cottages, High House Lane	Moderate	Major	Major	**Large adverse**	**Moderate adverse**
VR-S11-R-003	Baker Street Windmill, western edge of Baker Street	High	Major	Moderate	**Large adverse**	**Moderate adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S11-R-007	Residential properties along Godman Road, northern side of Cedar Road and eastern side of Barry Close, northern edge of Chadwell St Mary	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-008	Residential properties along the south side of Greyhound Lane, northern edge of Chadwell St Mary	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-012	Rose Cottage, Hornsby Lane	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-R-013	Residential properties along Gowers Lane, along the northern end of Squirrel's Chase and at the junction of Gowers Lane and Hornsby Lane, Orsett Heath	High	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-R-015	202 to 224 Heath Road, north of Orsett Heath	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-R-016	242, 246 and 246a Heath Road, north of Orsett Heath	Moderate	Major	Minor	**Large adverse**	**Slight adverse**
VR-S11-R-019	Heath Place, Hornsby Lane	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-R-020	The Whitecroft (also White Crofts on OS mapping), Stanford Road	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-R-022	Grey Goose Farm, Grey Goose Farm Cottage and Little Wellhouse Farm, Blackshots Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-030	Residential properties along the south of Stifford Clays Road and western side of Baker Street	High	Moderate	Minor	**Large adverse**	**Moderate adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S11-R-031	Residential properties along the eastern side of Baker Street	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-032	Residential properties along the north of Stifford Clays Road and west of Fen Lane, northern edge of Baker Street	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-035	Hollycrest House and Mill House, Mill Lane, western edge of Orsett	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-R-039	Springfield Farm, Stifford Clays Road, west of Baker Street	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-R-042	1 and 2 Potash Cottages	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-R-043	Five Chimney Cottages, A1013 Stanford Road	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S12-R-002	Residential properties along the northern side of Cheelson Road, northern edge of South Ockendon	High	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S12-R-005	Fen Farm and Fen Farm Cottages, Fen Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S12-R-010	Hobletts	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S12-R-014	The Evergreens and nearby properties along North Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S13-R-012	Railway Sidings, Ockendon Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight beneficial**
VR-S14-R-005	Franks Farm off St Marys Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S14-R-016	Tyas Stud Farm (including static caravans) and Latchford Farm, St Marys Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight beneficial**
Recreational receptors (route)						
VR-S09-RL-005	Footpath 200	Moderate	Major	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S09-RL-006	Footpath 200	Moderate	Major	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S09-RL-009	Low Street Lane Route	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-RL-001	Coal Road/Bridleway 58	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-RL-002	Footpath 61 and footpath 60	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-RL-008	Footpath 106 and footpath 105	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-RL-009	Footpath 95	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S10-RL-010	Footpath 79	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-RL-011	Footpath 95 and footpath 107	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S10-RL-013	Footpath 104	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-RL-003	Footpath 82, footpath 93 and footpath 94	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-RL-004	Footpath 97	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S12-RL-002	Footpath 136	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S12-RL-004	Footpath 136	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S12-RL-005	Footpath 135	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S12-RL-009	Footpath 90	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S12-RL-010	Footpath 135	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S12-RL-011	Bridleway 219 (Mardyke Way)	High	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S13-RL-005	Footpath 230 (within Thames Chase Forest Centre)	High	Major	Moderate	**Large adverse**	**Moderate adverse**
Recreational receptors (area)						
VR-S10-RA-001	Green space, Stenning Avenue, East Tilbury	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S10-RA-003	Orsett Golf Club, Brentwood Road, Orsett	Moderate	Moderate	Minor	**Moderate adverse**	**Slight beneficial**
Transport receptors (route)						
VR-S09-T-005	Station Road, between Low Street Lane and Readmans Industrial Estate	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S09-T-006	Station Road, Readmans Industrial Estate to Goshems Farm	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-T-004	Hoford Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S10-T-006	High House Lane (southern end)	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S10-T-007	High House Lane (northern end)	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S10-T-008	Brentwood Road, north of Chadwell St Mary	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-T-001	Fen Lane	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-T-004	Mill Lane	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-T-005	Stifford Clays Road (west)	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-T-006	Green Lane	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-T-008	Hornsby Lane, east of Orsett Heath	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-T-009	Baker Street	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-T-010	Rectory Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S11-T-012	Long Lane	Moderate	Major	Minor	**Moderate adverse**	**Slight adverse**
VR-S13-T-005	B1421, Ockendon Road	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
Other receptors						
VR-S11-O-001	Orsett Allotments, Rectory Road, Orsett	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**

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Visual receptor reference and description		Visual sensitivity	Magnitude of visual effect		Significance of effect	
			Opening year (winter)	Design year (summer)	Opening year (winter)	Design year (summer)
VR-S11-O-004	Allotments, Heath Road, Orsett Heath	Moderate	Moderate	Moderate	**Moderate adverse**	**Moderate adverse**
VR-S11-O-010	Willow Garden Day Nursery	Moderate	Major	Moderate	**Large adverse**	**Moderate adverse**
VR-S11-O-011	Orsett Heath Academy, Grays, adjacent to Thurrock Rugby Football Club	Moderate	Moderate	Minor	**Moderate adverse**	**Slight adverse**
VR-S14-O-005	In Fitness In Health gym, Franks Farm off St Marys Lane, Upminster	Low	Major	Minor	**Moderate adverse**	**Slight adverse**

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7.7 Cumulative effects

Intra-project effects

7.7.1 Cumulative effects of the Project can occur as a result of interrelationships between different environmental topics, which are referred to as 'intra-project' effects. For landscape and visual, interrelationships are identified with cultural heritage (Chapter 6: Cultural Heritage), terrestrial biodiversity (Chapter 8: Terrestrial Biodiversity), noise and vibration (Chapter 12: Noise and Vibration), air quality (Chapter 5: Air Quality) and population and human health (Chapter 13: Population and Human Health), and are summarised below:

a. Cultural heritage – effects on historic landscape character and designated and non-designated assets, including their setting, as a result of the Project, leading to effects on the landscape's perceptual qualities and/or cultural associations, and effects on visual receptors (refer to Chapter 6: Cultural Heritage).

b. Terrestrial biodiversity – effects on woodland and habitats which are key features of designated and non-designated landscapes (refer to Chapter 8: Terrestrial Biodiversity).

c. Noise and vibration – effects on landscape receptors as a result of the Project through changes to tranquillity (refer to Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3)).

d. Population and human health – the visual impact assessment has been taken into account in the assessment of effects on residential amenity, in combination with noise and vibration and air quality (refer to Chapter 16: Cumulative Effects Assessment), and on recreational access and connectivity (refer to Chapter 13: Population and Human Health). Landscape and visual effects are also a consideration within the assessment on human health (in terms of landscape amenity) undertaken within the Health and Equalities Impact Assessment (Application Document 7.10).

7.7.2 The above interrelationships have been considered as part of the cumulative effects assessment reported in Chapter 16: Cumulative Effects Assessment or, where identified in Table 16.2 of Chapter 16, the relevant topic chapters.

Inter-project effects

7.7.3 In addition to intra-project effects, cumulative effects can also occur due to the Project in combination with other existing and/or approved development. These are known as 'inter-project' effects and are considered separately in Chapter 16: Cumulative Effects Assessment.

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7.8 Monitoring

7.8.1 Significant adverse residual effects on landscape and visual amenity are predicted as a result of the construction and operation of the Project. Therefore, monitoring must be undertaken in line with the requirements of the EIA Regulations. Proposed monitoring during construction and operation is set out below.

Construction

7.8.2 An Environmental Clerk of Works will ensure the Project's construction is delivered in accordance with the measures set out within the REAC (REAC Ref. TB006), which forms part of the CoCP (Appendix 2.2, Application Document 6.3).

7.8.3 In addition, establishment of appropriate vegetation protection measures and areas for removal will be inspected by an Environmental Clerk of Works to ensure compliance with the Arboricultural Method Statement and Tree Protection Plans (to be developed during detailed design).

7.8.4 The Environmental Clerk of Works will also monitor the implementation of the landscape mitigation planting in order to ensure that best practice is being followed and the planting is implemented in accordance with the detailed design.

Operation

7.8.5 The REAC (REAC Ref. LV003), which forms part of the CoCP (Appendix 2.2, Application Document 6.3), sets out requirements for overseeing the first five years of vegetation establishment and replacement of any failed stock within the establishment aftercare period.

7.8.6 During the establishment aftercare period and beyond, environmental features (including soft landscape features) will be routinely inspected in accordance with the requirements stipulated in the detailed LEMP. Inspection will ensure management and maintenance of landscape elements, as identified in the detailed LEMP, are undertaken and that the landscape features establish and achieve their intended environmental function and objective. Monitoring of the establishment, growth and maintenance of landscape planting will be undertaken on a quarterly basis during the establishment aftercare period to ensure its successful establishment. The frequency of monitoring beyond the establishment aftercare period will be set out in the detailed LEMP before handover of the Project to National Highways or its appointed agent. The duration of this long-term management and monitoring is set out in the oLEMP (Application Document 6.7).

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7.9 Summary

7.9.1 The Project design has sought to avoid landscape and visual effects or reduce residual effects through the embedded mitigation measures shown on Figure 2.4: Environmental Masterplan (Application Document 6.2). Mitigation includes, where practicable, replacing vegetation that would be removed to facilitate construction, the provision of green bridges to maintain landscape continuity across the Project route, false cutting earthworks to help screen views and extensive woodland planting at the junctions with the A2, A13 and M25 to help integrate the Project into the landscape, along with woodland, tree belts and hedgerow planting along the rest of the Project route.

7.9.2 South of the river, within the AONB, construction works and vegetation removal along the existing A2 corridor would be locally prominent. Outside of the AONB to the south and north of the River Thames, including land within the setting of the AONB, construction works and construction compounds would be prominent in the landscape, in particular at the M2/A2/A122 Lower Thames Crossing junction and the large northern and southern tunnel entrance compounds.

7.9.3 During construction, there would therefore be very large significant adverse effects on the landscape character of the West Kent Downs (sub area Shorne) LLCA within the West Kent Downs LCA 1A in the AONB, and the Thong and Chalk LLCA sub areas of Higham Arable Farmland, south of the River Thames.

7.9.4 North of the river, there would be large significant adverse effects on the landscape character of the West Tilbury Urban Fringe, White Croft/Orsett Heath Urban Fringe and Thurrock Reclaimed Fen (sub area Mardyke) LLCAs.

7.9.5 There would also be moderate significant adverse effects on seven other LLCAs, where the influence of vegetation removal and construction works would be more limited, as reported in Table 7.18, Table 7.19 and Table 7.20 of this chapter.

7.9.6 South of the River Thames, there would be very large and large significant adverse effects on views, resulting from open, close-range or extensive views of construction works. Within the AONB, the most affected views would be those of PRoWs users close to the A2 corridor, including views from overbridges. Vegetation removal along the existing A2 and within the central reservation would open up views towards construction works and increase existing views of traffic and highway infrastructure. Views within the AONB from further afield would generally be prevented by existing woodland within Shorne Woods Country Park and along the northern edge of Cobham Hall Registered Park and Garden.

7.9.7 Outside of the AONB, construction works for the M2/A2/A122 Lower Thames Crossing junction and the extensive southern tunnel entrance compound would result in the principal visual effects to the south of the River Thames. This would include views from Jeskyns Community Woodland, the western edge of Thong village, the eastern edges of Gravesend and Chalk, and scattered residential properties and PRoWs along and near Shorne Ifield Road and west of Shorne village.

7.9.8 To the north of the River Thames, the main visual effects would result from construction of the sculptural landscape mounding within Tilbury Fields, the extensive northern tunnel entrance compound and construction works for the Project road and associated structures and other construction compounds. This

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would include views from the Two Forts Way coastal path, scattered residential properties and PRoWs between West and East Tilbury, the western edge of East Tilbury, the northern edge of Chadwell St Mary and Orsett Heath, the eastern edge of Grays, scattered residential properties and PRoWs between Orsett and Chadwell St Mary, the western and southern edges of Baker Street, scattered PRoWs and the Mardyke Way at Orsett Fen, residential properties and PRoWs along the northern edge of South Ockendon, and users of the Thames Chase Forest Centre.

7.9.9 There would also be moderate significant adverse effects on several other individual or groups of visual receptors where the influence of vegetation removal and construction works would be more limited, as reported in Table 7.21, Table 7.22, Table 7.23 and Table 7.24 of this chapter.

7.9.10 On completion of construction, approximately 4.25km of the new Project road would be in tunnel and therefore not visible crossing the River Thames, the Shorne and Higham Marshes LLCA or the northern part of the Higham Arable Farmland LLCA south of the river. Furthermore, extensive false cutting earthworks along the Project route would help screen views of the new road and traffic using it.

7.9.11 South of the river, during winter of opening year, permanent vegetation removal along the A2 corridor would result in reduced enclosure and increased visibility of highway infrastructure and traffic within the AONB, resulting in large significant adverse effects on the West Kent Downs (sub area Shorne) LLCA within the West Kent Downs LCA 1A. However, this effect would be localised to the area adjoining the A2 corridor due to the visual enclosure provided by existing woodland within Shorne Woods Country Park and along the northern edge of Cobham Hall Registered Park and Garden.

7.9.12 Outside of the AONB, there would be very large significant adverse effects on the landscape character of the Higham Arable Farmland (sub area Thong) LLCA south of the river due to the prominent M2/A2/A122 Lower Thames Crossing junction, and on the Thurrock Reclaimed Fen (sub area Mardyke) LLCA north of the river due to the prominence of the new road in the remote, open and tranquil landscape. There would be large significant adverse effects on the landscape character of the West Tilbury Urban Fringe and White Croft/Orsett Heath Urban Fringe LLCAs due to the presence of the new road, traffic and highway infrastructure in the landscape.

7.9.13 There would also be moderate significant adverse effects on five other LLCAs, where the influence of the Project would be more limited, as reported in Table 7.27 and Table 7.28 of this chapter.

7.9.14 There would be very large and large significant adverse effects on views, resulting from open, close-range, or extensive views of the new road, traffic and highway infrastructure. Within the AONB, the most affected views would be those from Park Pale overbridge, a small, localised area on the northern edge of Cobham Hall Registered Park and Garden, Brewers Road overbridge and at each end of Thong Lane overbridge near the Inn on the Lake Hotel and a bridge over the HS1 railway line, where the reduction of enclosing vegetation along the edge of the A2 corridor and in the central reservation would result in increased views of traffic and highway infrastructure. Views within the AONB from further afield would generally be prevented by woodland within Shorne Woods Country Park and along the northern edge of Cobham Hall Registered Park and Garden.

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7.9.15 Outside of the AONB, the new M2/A2/A122 Lower Thames Crossing junction, associated viaducts, traffic and highway infrastructure would be particularly prominent to the south of the River Thames. The most affected views would include those from the eastern edge of Gravesend and western edge of Thong village.

7.9.16 To the north of the river, the main visual effects would result from Tilbury Viaduct, the A13/A1089/A122 Lower Thames Crossing junction and the Project road crossing Orsett Fen. This would include scattered residential properties between West and East Tilbury, the northern edge of Chadwell St Mary and Orsett Heath, scattered residential properties and PRoWs between Orsett and Chadwell St Mary, the western and southern edges of Baker Street, scattered PRoWs and the Mardyke Way at Orsett Fen and users of the Thames Chase Forest Centre. There would also be moderate significant adverse effects on several other individual or groups of visual receptors where the influence of the operational Project road would be more limited, as reported in Table 7.29, Table 7.30, Table 7.31 and Table 7.32 of this chapter.

7.9.17 Effects on landscape character and views would generally reduce by year 15 of operation (summer of design year) once mitigation planting has established. Some landscape and visual effects would reduce to be non-significant in the context of the EIA Regulations. However, a significant adverse effect would remain on five LLCAs, with large adverse effects on the landscape character of the Higham Arable Farmland (sub area Thong) and Thurrock Reclaimed Fen (sub area Mardyke) LLCAs, and moderate adverse effects on the landscape character of the West Kent Downs (sub area Shorne) LLCA within the West Kent Downs LCA 1A, the West Tilbury Urban Fringe LLCA and the White Croft/Orsett Heath Urban Fringe LLCA.

7.9.18 There would, however, be a significant moderate beneficial effect on the landscape character of the Mid Kent Downs (sub area Bredhurst) LLCA and the Shorne Wooded Slopes LLCA, and a slight beneficial effect on the landscape character of the Brentwood Wooded Hills LLCA. This would result from established woodland habitat at the nitrogen deposition compensation sites enhancing the character of these areas and softening the appearance of features such as pylons, communications masts, telegraph poles, highway infrastructure and the urban edge.

7.9.19 A significant adverse effect would also remain on several visual receptors, with very large adverse effects on users of the Mardyke Way in Orsett Fen, and large adverse effects on visual receptors at the end of Thong Lane overbridge near a bridge over the HS1 railway line, a PRoW near the eastern edge of Gravesend, scattered residential properties near West Tilbury and high-rise flats along the northern edge of Chadwell St Mary. There would also be moderate significant adverse effects on several other individual or groups of visual receptors, as reported in Table 7.29, Table 7.30, Table 7.31 and Table 7.32 of this chapter.

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7.9.20 For users of the northern end of footpath NS161 north of Park Pale and users of Brewers Road overbridge, effects on views would be beneficial due to the screening provided by mitigation planting. In addition, there would be beneficial effects on views from PRoWs to the west of Jeskyns Community Woodland, a PRoW at the edge of Shorne village, PRoWs and residential properties near Bluebell Hill, including part of the North Downs Way, Orsett Golf Club, a PRoW near Orsett Golf Club and a PRoW near Great Warley. This would result from established woodland habitat at the nitrogen deposition compensation sites enhancing views and softening the appearance of features such as pylons, communications masts, telegraph poles and highway infrastructure.

7.9.21 A series of intermittent views would be created from the new road, for vehicle travellers between the A2 to the south and M25 to the north. Notable new views would include those from the chalk cutting approach to the South Portal overlooking the Thames Estuary and elevated views from the proposed viaducts including those crossing Orsett Fen and the Mardyke.

7.9.22 As required by DMRB LA 107, the effect of the Project on both the landscape and visual amenity has been separately assessed and the outcome combined to a single conclusion of the likely significant effect on landscape and visual amenity. Although there would be some very large and large adverse effects arising from the Project, these would be localised due to extensive mitigation proposals which would help screen views of the new road and reinstate landscape features removed to facilitate construction. For the most part, effects of the Project would be moderate or below. It is therefore concluded that the Project would result in a combined moderate adverse significance of overall landscape and visual effect on the existing landscape and visual amenity, which is considered significant in the context of the EIA Regulations.

7.9.23 The following Table 7.33, Table 7.34 and Table 7.35 provide a summary of all predicted impacts in this chapter, taking into account the Project design and mitigation set out in Section 7.5. It is noted that refinement of the Project design during the detailed design stage could further mitigate the reported effects, however, this refinement has not been taken into account in the landscape and visual impact assessment reported in this chapter. The summary of landscape effects in Table 7.33 and Table 7.34 includes both direct and indirect effects on each NCA, MCA and LLCA. For a distinction between the two types of effects, reference should be made to Appendix 7.9: Schedule of Landscape Effects (Application Document 6.3) for further details.

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Table 7.33 Landscape impact summary table: construction

Impact description	Sensitivity	Magnitude of effect	Effect	Significance
National character				
NCA 119: North Downs Adverse change in landscape character due to loss of vegetation, the perception of construction activity along the A2 corridor and for the new M2/A2/A122 Lower Thames Crossing junction and associated light sources, resulting in a further reduction in relative tranquillity	High	Minor adverse	Slight adverse	Not significant
NCA 113: North Kent Plain Adverse change in landscape character due to loss of vegetation and arable land, the perception of large-scale construction activity for the new M2/A2/A122 Lower Thames Crossing junction, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	High	Moderate adverse	Moderate adverse	Significant
NCA 81: Greater Thames Estuary Adverse change in landscape character due to loss of farmland and hedgerows, the perception of conspicuous construction activity, including substantial earthworks at the North Portal and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Moderate adverse	Moderate adverse	Significant
NCA 111: Northern Thames Basin Adverse change in landscape character, including that of the Thames Chase Forest Centre, due to loss of vegetation, arable farmland and ancient woodland, the perception of conspicuous construction activity at the A13/A1089/A122 Lower Thames Crossing junction and along the Project route and M25, including notable earthworks and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Minor adverse	Slight adverse	Not significant
Marine character				
South East MCA 18: Thames and Medway Estuaries Adverse change in marine character due to localised perception of construction activity for the North Portal close to the northern shore of the Thames Estuary, resulting in a further reduction in relative tranquillity	Medium	Minor adverse	Slight adverse	Not significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Kent Downs AONB LCA and LLCAs				
West Kent Downs LCA 1A (comprising the sub areas of Shorne and Cobham) Adverse change in landscape character due to partial loss of mature woodland, the perception of large-scale construction activity along the existing A2/M2 corridor and associated light sources, resulting in a further reduction in relative tranquillity	Very high	Moderate adverse	Large adverse	Significant
Mid Kent Downs (sub area Bredhurst) LLCA No change in landscape character during construction	High	No change	Neutral	Not significant
Hollingbourne Scarp and Vale (sub area Boxley Vale) LLCA No change in landscape character during construction	High	No change	Neutral	Not significant
Medway Valley (sub area The Eastern Scarp) LLCA No change in landscape character during construction	High	No change	Neutral	Not significant
LLCAs within the setting of the Kent Downs AONB and Green Belt				
Higham Arable Farmland (sub area Gadshill) LLCA Very localised changes in landscape character due to construction activities at the M2 junction 1	Medium	Negligible adverse	Slight adverse	Not significant
Shorne Wooded Slopes LLCA Very localised indirect changes in landscape character due to construction activities along the A2/M2 corridor	High	Negligible adverse	Slight adverse	Not significant
Higham Arable Farmland (sub area Thong) LLCA Adverse change in landscape character due to loss of arable land and mature woodland, and the perception of large-scale construction activity for the M2/A2/A122 Lower Thames Crossing junction, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	High	Major adverse	Very large adverse	Significant
Istead Arable Farmlands LLCA Adverse change in landscape character due to loss of vegetation to the north within Claylane Wood, Gravelhill Wood and the A2 corridor, and the perception of large-scale construction activity for the M2/A2/A122 Lower Thames Crossing junction and associated light sources within the Higham Arable Farmland (sub area Thong LLCA), resulting in a further reduction in relative tranquillity	Medium	Moderate adverse	Moderate adverse	Significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Gravesend Southern Fringe LLCA Adverse change in landscape character due to loss of vegetation along the A2 corridor, and the perception of construction activity along the A2 and for the M2/A2/A122 Lower Thames Crossing junction to the east, including associated light sources	Medium	Minor adverse	Slight adverse	Not significant
Higham Arable Farmland (sub area Chalk) LLCA Adverse change in landscape character due to substantial loss of arable land, and the perception of large-scale construction activity for the South Portal, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	High	Major adverse	Very large adverse	Significant
Shorne and Higham Marshes LLCA Adverse change in landscape character due to small-scale reversible loss of arable land, and the perception of conspicuous construction activity for the South Portal within the Higham Arable Farmland (sub area Chalk) LLCA to the south, including associated light sources, resulting in a limited further reduction in relative tranquillity	Medium	Minor adverse	Slight adverse	Not significant
Mucking Marshes LLCA Adverse change in landscape character due to the perception of small-scale, localised construction activity for ecological mitigation, as well as large-scale construction activity within the Tilbury Marshes LLCA to the west, including associated light sources, resulting in a limited further reduction in relative tranquillity	Medium	Negligible	Slight adverse	Not significant
Tilbury Marshes LLCA Adverse change in landscape character due to loss of some scrub and hedgerow vegetation, substantial loss of arable and pastoral land, the perception of large-scale construction activity for the North Portal, including associated light sources, and substantial earthworks for the sculptural landscape mounding, resulting in a further reduction in relative tranquillity	Low	Major adverse	Moderate adverse	Significant
Chadwell Escarpment Urban Fringe LLCA Adverse change in landscape character due to loss of woodland/scrub at Tilbury Viaduct and some hedgerow vegetation, small-scale loss of arable land, and the perception of conspicuous construction activity along the Project route, including earthworks adjoining	Medium	Moderate adverse	Moderate adverse	Significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Tilbury Viaduct and construction light sources, resulting in a further reduction in relative tranquillity				
LLCAs within the Green Belt/areas beyond the setting of the Kent Downs AONB				
Dartford and Gravesend Fringe LLCA Localised construction activity associated with utilities	Low	No change	Neutral	Not significant
West Tilbury Urban Fringe LLCA Adverse change in landscape character due to loss of woodland at Readmans Industrial Estate and some hedgerows, substantial loss of arable farmland, and the perception of conspicuous construction activity for the Project route, including Tilbury Viaduct, substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Major adverse	Large adverse	Significant
Linford/Buckingham Hill Urban Fringe LLCA Adverse change in landscape character due to the loss of ancient woodland at Rainbow Wood, and the perception of conspicuous construction activity along the Project route and for Hoford Road green bridge, including earthworks and construction light sources, resulting in a further reduction in relative tranquillity	Low	Minor adverse	Slight adverse	Not significant
White Croft/Orsett Heath Urban Fringe LLCA Adverse change in landscape character due to loss of existing vegetation along the A13 and field boundary hedgerows, substantial loss of arable land, and the perception of conspicuous construction activity for the Project route and southern part of the A13/A1089/A122 Lower Thames Crossing junction, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Major adverse	Large adverse	Significant
Orsett Lowland Farmland LLCA Adverse change in landscape character due to loss of roadside vegetation, including at the A13/A1089/A122 Lower Thames Crossing junction, substantial loss of pasture and arable farmland, and the perception of conspicuous construction activity along the Project route and for the northern part of the A13/A1089/A122 Lower Thames Crossing junction, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Moderate adverse	Moderate adverse	Significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Thurrock Reclaimed Fen (sub area Mardyke) LLCA Adverse change in landscape character due to loss of tree belt along the Mardyke, some hedgerows and part of The Wilderness woodland block, substantial loss of arable farmland, and the perception of large-scale construction activity for the Project route on embankment and the Orsett Fen and Mardyke Viaducts, including associated light sources in a largely dark area, resulting in a reduction in the level of tranquillity within the former fen landscape	High	Major adverse	Large adverse	Significant
Thurrock Reclaimed Fen (sub area Thames Chase) LLCA Adverse change in landscape character, including that of the Thames Chase Forest Centre, due to loss of screen planting along the M25, and the perception of conspicuous construction activity for the widening of the M25 corridor and new slip roads for the Project route, including associated earthworks and light sources, resulting in a further reduction in relative tranquillity	Medium	Moderate adverse	Moderate adverse	Significant
Belhus Lowland Quarry Farmland LLCA Adverse change in landscape character due to loss of woodland screening along the M25, loss of farmland within the footprint of the Project route, and the perception of conspicuous construction activity along the Project route north of South Ockendon and along the M25, including substantial earthworks and associated light sources, resulting in a further reduction in relative tranquillity	Medium	Moderate adverse	Moderate adverse	Significant
Brentwood Wooded Hills LLCA Adverse change in landscape character due to limited loss of woodland along the M25, very localised loss of ancient woodland at Codham Hall Wood, and the perception of construction activity within the context of the M25 corridor, resulting in a further reduction in relative tranquillity	Medium	Negligible adverse	Neutral	Not significant

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Table 7.34 Landscape impact summary table: operation

Impact description	Sensitivity	Magnitude of effect	Effect	Significance
National character				
NCA 119: North Downs Adverse change in landscape character due to a localised reduction in the wooded backdrop to the north, perceived in the context of new woodland planting, and a very limited, further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction	High	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Negligible adverse	Design year Slight adverse	Not significant
NCA 113: North Kent Plain Adverse change in landscape character due to a continued partial absence of mature woodland along the A2 corridor and at Claylane Wood, and the perception of substantial earthworks, structures and highway infrastructure at the prominent M2/A2/A122 Lower Thames Crossing junction and along the new transport corridor, which would bisect the open landscape character between the urban area of Gravesend and Shorne Woods Country Park, resulting in a further reduction in relative tranquillity	High	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
NCA 81: Greater Thames Estuary Adverse change in landscape character due to the perception of prominent sculptural landscape mounding at Tilbury Fields along the northern bank of the River Thames, and a new transport corridor and highway infrastructure within the farmland and reclaimed marshland landscape, resulting in a further reduction in relative tranquillity	Medium	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Minor adverse	Design year Slight adverse	Not significant
NCA 111: Northern Thames Basin Adverse change in landscape character, including that of the Thames Chase Forest Centre, due to the continued absence of some woodland including partial loss of ancient woodland at Rainbow Wood and Codham Hall Wood adjoining the M25, and the perception of the Project route, the A13/A1089/A122 Lower Thames Crossing junction and widened M25 corridor, with associated earthworks, structures and highway infrastructure, resulting in a further reduction in relative tranquillity	Medium	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Minor adverse	Design year Slight adverse	Not significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Marine character				
South East MCA 18: Thames and Medway Estuaries Adverse change in landscape character due to the perception of the sculptural landscape mounding at Tilbury Fields in the otherwise typically flat landscape adjoining the River Thames to the north	Medium	Opening and design year Negligible adverse	Opening and design year Neutral	Not significant
Kent Downs AONB LCA and LLCAs				
West Kent Downs LCA 1A (comprising the sub areas of Shorne and Cobham) Adverse change in landscape character due to the continued absence of mature woodland along the A2 corridor and localised change in wooded character, perceived in the context of new woodland planting, and the perception of greater landscape severance north and south of the modified A2, resulting in a further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and highway infrastructure	Very high	Opening year Moderate adverse	Opening year Large adverse	Significant
		Design year Minor adverse	Design year Moderate adverse	Significant
Mid Kent Downs (sub area Bredhurst) LLCA Increase in the amount of woodland within the LLCA and reduction in the prominence of communications masts and overhead lines	High	Opening year Negligible adverse	Opening year Neutral	Not significant
		Design year Moderate beneficial	Design year Moderate beneficial	Significant
Hollingbourne Scarp and Vale (sub area Boxley Vale) LLCA Increase in the amount of woodland within the adjacent Mid Kent Downs (sub area Bredhurst) LLCA and reduction in the prominence of communications masts and overhead lines, although perceived along a narrow margin of the LLCA due to intervening woodland and landform	High	Opening year No change	Opening year Neutral	Not significant
		Design year Negligible beneficial	Design year Neutral	Not significant
Medway Valley (sub area The Eastern Scarp) LLCA The perception of established mitigation planting at the Blue Bell Hill nitrogen deposition compensation site (located within the neighbouring Mid Kent Downs (sub area Bredhurst) LLCA) would be very limited, therefore resulting in a neutral effect	High	Opening year No change	Opening year Neutral	Not significant
		Design year No change	Design year Neutral	Not significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
LLCAs within the setting of the Kent Downs AONB and Green Belt				
Higham Arable Farmland (sub area Gadshill) LLCA No perceived change in landscape character following establishment of mitigation planting	Medium	Opening year Negligible adverse	Opening year Slight adverse	Not significant
		Design year No change	Design year Neutral	Not significant
Shorne Wooded Slopes LLCA Increase in the amount of woodland within the LLCA and, in some instances, reduction in the prominence of telegraph poles and surrounding built form within Shorne and Higham	High	Opening year Negligible adverse	Opening year Neutral	Not significant
		Design year Moderate beneficial	Design year Moderate beneficial	Significant
Higham Arable Farmland (sub area Thong) LLCA Adverse change in landscape character due to the continued partial absence of mature woodland along the A2 corridor and at Claylane Wood, and the perception of substantial earthworks, structures and highway infrastructure at the prominent M2/A2/A122 Lower Thames Crossing junction and along the new transport corridor, which would bisect the open landscape character between the urban area of Gravesend and Shorne Woods Country Park, resulting in a further reduction in relative tranquillity	High	Opening year Major adverse	Opening year Very large adverse	Significant
		Design year Major adverse	Design year Large adverse	Significant
Istead Arable Farmlands LLCA Adverse change in landscape character due to a continued localised reduction in the wooded backdrop to the north-east, and a very limited, further reduction in relative tranquillity due to the increased prominence of the modified A2 corridor and new M2/A2/A122 Lower Thames Crossing junction	Medium	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
Gravesend Southern Fringe LLCA Adverse change in landscape character due to a limited perceived reduction in roadside vegetation along the modified A2 corridor	Medium	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Negligible adverse	Design year Neutral	Not significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
Higham Arable Farmland (sub area Chalk) LLCA Adverse change in landscape character due to the conspicuous transport corridor, highway infrastructure and substantial cutting slopes approaching the South Portal, which would bisect and partially sever this LLCA from the urban edge of Gravesend, resulting in a further reduction in relative tranquillity	High	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
Shorne and Higham Marshes LLCA No perceived change in landscape character	Medium	Opening year Negligible adverse	Opening year Slight adverse	Not significant
		Design year No change	Design year Neutral	Not significant
Mucking Marshes LLCA No perceived change in landscape character following establishment of water vole habitat	Medium	Opening year Negligible adverse	Opening year Neutral	Not significant
		Design year No change	Design year Neutral	Not significant
Tilbury Marshes LLCA Adverse change in landscape character due to the perception of prominent sculptural landscape mounding at Tilbury Fields, and a new transport corridor and highway infrastructure within the farmland and reclaimed marshland landscape, which would bisect the LLCA, resulting in a further reduction in relative tranquillity	Low	Opening year Moderate adverse	Opening year Slight adverse	Not significant
		Design year Moderate adverse	Design year Slight adverse	Not significant
Chadwell Escarpment Urban Fringe LLCA Adverse change in landscape character due to the continued absence of woodland/scrub at Tilbury Viaduct, and the perception of substantial earthworks, Tilbury Viaduct and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity	Medium	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Minor adverse	Design year Slight adverse	Not significant
LLCAs within Green Belt/areas beyond the setting of the Kent Downs AONB				
Dartford and Gravesend Fringe LLCA No perceived change in landscape character	Low	Opening year No change	Opening year Neutral	Not significant
		Design year	Design year	Not significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
		No change	Neutral	
West Tilbury Urban Fringe LLCA Adverse change in landscape character due to the continued absence of woodland adjoining Readmans Industrial Estate, and the perception of substantial earthworks, Tilbury Viaduct, bridge structures and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity	Medium	Opening year Major adverse	Opening year Large adverse	Significant
		Design year Moderate adverse	Design year Moderate adverse	Significant
Linford/Buckingham Hill Urban Fringe LLCA Adverse change in landscape character due to the loss of ancient woodland at Rainbow Wood, and the perception of earthworks and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity, although largely integrated by woodland planting within the LLCA	Low	Opening year Minor adverse	Opening year Slight adverse	Not significant
		Design year Negligible adverse	Design year Neutral	Not significant
White Croft/Orsett Heath Urban Fringe LLCA Adverse change in landscape character due to the further localised urbanisation of the landscape arising from the southern part of the A13/A1089/A122 Lower Thames Crossing junction, and earthworks, bridges and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity	Medium	Opening year Major adverse	Opening year Large adverse	Significant
		Design year Moderate adverse	Design year Moderate adverse	Significant
Orsett Lowland Farmland LLCA Adverse change in landscape character due to the further localised urbanisation of the landscape arising from the northern part of the A13/A1089/A122 Lower Thames Crossing junction, and earthworks and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity	Medium	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
Thurrock Reclaimed Fen (sub area Mardyke) LLCA Adverse change in landscape character due to the continued absence of a tree belt along the Mardyke and part of The Wilderness woodland block, and the perception of substantial embankments, the Orsett Fen and Mardyke Viaduct structures, highway infrastructure and vehicle traffic	High	Opening year Major adverse	Opening year Very large adverse	Significant
		Design year Major adverse	Design year Large adverse	Significant

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Impact description	Sensitivity	Magnitude of effect	Effect	Significance
within the flat, open and relatively remote former fen landscape, resulting in a notable reduction in tranquillity				
Thurrock Reclaimed Fen (sub area Thames Chase) LLCA Adverse change in landscape character due to the localised widening of the existing M25 motorway corridor to accommodate the new Project slip roads, resulting in a further reduction in relative tranquillity due to the increased prominence of the modified M25 corridor	Medium	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
Belhus Lowland Quarry Farmland LLCA Adverse change in landscape character due to the perception of substantial earthworks, structures and highway infrastructure along the new transport corridor, resulting in a further reduction in relative tranquillity, although partially in the context of the existing M25	Medium	Opening year Moderate adverse	Opening year Moderate adverse	Significant
		Design year Minor adverse	Design year Slight adverse	Not significant
Brentwood Wooded Hills LLCA Increase in the amount of woodland within the LLCA and reduction in the prominence of the M25 corridor	Medium	Opening year Negligible adverse	Opening year Neutral	Not significant
		Design year Minor beneficial	Design year Slight beneficial	Not significant

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Table 7.35 Visual impact table

Effect	Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
Construction			
South of the River Thames			
Very large adverse	6 recreational route viewpoints 1 transport route viewpoint	6 residential receptors or groups	Significant
Large adverse	6 recreational route viewpoints 2 recreational area viewpoints 1 transport route viewpoint	9 residential receptors or groups 3 recreational routes or groups 1 recreational area or group 3 transport routes or groups 1 other receptor or group	Significant
Moderate adverse	4 recreational route viewpoints 2 recreational area viewpoints 1 transport route viewpoint	23 residential receptors or groups 10 recreational routes or groups 3 recreational areas or groups 6 transport routes or groups 2 other receptors or groups	Significant
Slight adverse	1 residential viewpoint 8 recreational route viewpoints 1 transport route viewpoint	33 residential receptors or groups 16 recreational routes or groups 6 recreational areas or groups 12 transport routes or groups 11 other receptors or groups	Not significant
Neutral	3 residential viewpoints 9 recreational route viewpoints	8 residential receptors or groups 3 recreational routes or groups 1 recreational area or group 4 transport routes or groups 3 other receptors or groups	Not significant

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Effect		Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
North of the River Thames				
Very large adverse		2 recreational route viewpoints	0 receptors or groups	Significant
Large adverse		5 residential viewpoints 8 recreational route viewpoints 2 recreational area viewpoint 2 transport route viewpoints	29 residential receptors or groups 18 recreational routes or groups 1 recreational area or group 9 transport routes or groups 2 other receptors or groups	Significant
Moderate adverse		1 residential viewpoint 12 recreational route viewpoints 2 recreational area viewpoints 2 transport route viewpoints	32 residential receptors or groups 10 recreational routes or groups 3 recreational areas or groups 11 transport routes or groups 9 other receptors or groups	Significant
Slight adverse		1 residential viewpoint 7 recreational route viewpoints 2 recreational area viewpoint 3 transport route viewpoints	76 residential receptors or groups 24 recreational routes or groups 5 recreational areas or groups 40 transport routes or groups 17 other receptors or groups	Not significant
Neutral		1 residential viewpoint 2 recreational route viewpoints	3 residential receptor or group 3 transport routes or groups 7 other receptors or groups	Not significant
Operation				
Effect at opening year	**Effect at design year**			
South of the River Thames				
Very large adverse	Large adverse	1 recreational route viewpoint	0 receptors or groups	Significant

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Effect		Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
Large adverse	Large adverse	1 recreational route viewpoint	0 receptors or groups	Significant
Large adverse	Moderate adverse	5 recreational route viewpoints	1 residential receptor or group 1 transport route or group	Significant
Large adverse	Slight adverse	1 recreational route viewpoint	2 residential receptors or groups	Significant reducing to not significant
Large adverse	Slight beneficial	2 recreational route viewpoints	1 transport route or group	Significant reducing to not significant
Large adverse	Moderate beneficial	1 recreational route viewpoint	0 receptors or groups	Significant
Moderate adverse	Moderate adverse	2 recreational route viewpoints	3 residential receptors or groups 1 transport route or group 1 other receptor or group	Significant
Moderate adverse	Slight adverse	4 recreational route viewpoints 4 recreational area viewpoints 1 transport route viewpoint	4 residential receptors or groups 1 recreational route or group 3 recreational areas or groups 1 transport route or group	Significant reducing to not significant
Moderate adverse	Neutral	0 viewpoints	1 residential receptor or group 1 transport route or group	Significant reducing to not significant
Moderate adverse	Slight beneficial	1 recreational route viewpoint	1 residential receptor or group	Significant reducing to not significant
Slight adverse	Slight adverse	1 residential viewpoint 8 recreational route viewpoints 1 transport route viewpoint	20 residential receptors or groups 11 recreational routes or groups 4 recreational areas or groups 2 transport routes or groups 4 other receptors or groups	Not significant
Slight adverse	Neutral	3 recreational route viewpoints	13 residential receptors or groups	Not significant

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Effect		Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
		2 transport route viewpoints	6 recreational routes or groups 1 recreational area or group 4 transport routes or groups 2 other receptors or groups	
Slight adverse	Slight beneficial	0 viewpoints	3 residential receptors or groups 1 recreational route or group 3 transport routes or groups 1 other receptor or group	Not significant
Slight adverse	Moderate beneficial	1 recreational route viewpoint	1 recreational route or group	Not significant increasing to significant beneficial
Neutral	Neutral	1 residential viewpoint 4 recreational route viewpoints	30 residential receptors or groups 12 recreational routes or groups 3 recreational areas or groups 11 transport routes or groups 9 other receptors or groups	Not significant
Neutral	Slight adverse	1 residential viewpoint 2 recreational route viewpoints	0 receptors or groups	Not significant
Neutral	Slight beneficial	2 recreational route viewpoint	0 receptors or groups	Not significant
Neutral	Moderate beneficial	1 residential viewpoint 2 recreational route viewpoints	0 receptors or groups	Not significant increasing to significant beneficial
Slight beneficial	Slight adverse	0 viewpoints	1 residential receptor or group	Not significant
Slight beneficial	Slight beneficial	0 viewpoints	1 recreational route or group	Not significant

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Effect		Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
North of the River Thames				
Very large adverse	Very large adverse	2 recreational route viewpoints	0 receptors or groups	Significant
Large adverse	Large adverse	1 residential viewpoint	1 residential receptor or group	Significant
Large adverse	Moderate adverse	2 residential viewpoints 1 recreational area viewpoint 2 transport route viewpoints	9 residential receptors or groups 4 recreational routes or groups 3 transport routes or groups 1 other receptor or group	Significant
Large adverse	Slight adverse	0 viewpoints	1 residential receptor or group	Significant reducing to not significant
Moderate adverse	Moderate adverse	1 residential viewpoint 7 recreational route viewpoints 1 recreational area viewpoint	13 residential receptors or groups 9 recreational routes or groups 1 recreational area or group 3 transport routes or groups 3 other receptor or group	Significant
Moderate adverse	Slight adverse	2 residential viewpoints 9 recreational route viewpoints 2 transport route viewpoints	15 residential receptors or groups 6 recreational routes or groups 9 transport routes or groups 2 other receptors or groups	Significant reducing to not significant
Moderate adverse	Slight beneficial	0 viewpoints	2 residential receptors or groups 1 recreational area or group	Significant reducing to not significant
Moderate adverse	Moderate beneficial	1 recreational route viewpoint	0 receptors or groups	Significant
Slight adverse	Slight adverse	1 residential viewpoint 4 recreational route viewpoints 4 recreational area viewpoints	36 residential receptors or groups 6 recreational routes or groups 1 recreational area or group 3 transport routes or groups	Not significant

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Effect		Number of Representative Viewpoints	Number of receptors or receptor groups	Significance of residual effect
			5 other receptors or groups	
Slight adverse	Neutral	1 transport route viewpoint	17 residential receptors or groups 11 recreational routes or groups 4 recreational areas or groups 18 transport routes or groups 6 other receptors or groups	Not significant
Slight adverse	Slight beneficial	0 viewpoints	2 transport routes or groups	Not significant
Neutral	Neutral	1 residential viewpoint 5 recreational route viewpoints 2 transport route viewpoints	46 residential receptors or groups 18 recreational routes or groups 2 recreational areas or groups 25 transport routes or groups 18 other receptors or groups	Not significant
Neutral	Slight adverse	1 recreational route viewpoint	0 receptors or groups	Not significant
Neutral	Slight beneficial	1 recreational route viewpoint	1 other receptor or group	Not significant
Neutral	Moderate beneficial	1 recreational route viewpoint	0 receptors or groups	Not significant increasing to significant beneficial

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References

British Standards Institution (2012). BS 5837:2012: Trees in relation to design, demolition and construction. Recommendations. London: British Standards Institution.

Campaign to Protect Rural England (2016). England's Light Pollution and Dark Skies. Accessed November 2021. https://www.nightblight.cpre.org.uk/maps/.

Campaign to Protect Rural England (2005). Mapping Tranquillity: Defining and assessing a valuable resource. Accessed November 2019. https://www.cpre.org.uk/wp-content/uploads/2019/11/mapping_tranquillity.pdf.

Campaign to Protect Rural England (2007) Tranquillity Map: England. National map with 2001 district boundaries. Accessed November 2021. https://www.cpre.org.uk/resources/tranquility-map-england/.

Department for Environment, Food and Rural Affairs (2009). Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. Accessed March 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/716510/pb13298-code-of-practice-090910.pdf.

Department for Transport (2014). National Policy Statement for National Networks. Accessed June 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/387223/npsnn-web.pdf.

Department of Energy and Climate Change (DECC) (2011a). Overarching National Policy Statement for Energy (EN-1). Accessed November 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/47854/1938-overarching-nps-for-energy-en1.pdf.

Department of Energy and Climate Change (DECC) (2011b). National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4). Accessed November 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37049/1941-nps-gas-supply-oil-en4.pdf.

Department of Energy and Climate Change (DECC) (2011c). National Policy Statement for Electricity Networks Infrastructure (EN-5). Accessed November 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/37050/1942-national-policy-statement-electricity-networks.pdf.

Discover Gravesham (n.d.). Charles Dickens. Accessed October 2021. http://www.discovergravesham.co.uk/famous-people/charles-dickens.html.

Forestry Commission (2022). Resources – Ash Dieback (Hymenoscyphus fraxineus). Accessed June 2022. https://www.forestresearch.gov.uk/tools-and-resources/fthr/pest-and-disease-resources/ash-dieback-hymenoscyphus-fraxineus/.

Gravesham Borough Council (2009). Gravesham Landscape Character Assessment. Accessed November 2021. https://www.gravesham.gov.uk/home/planning-and-building/nature-conservation-and-landscape/landscape.

Highways Agency (2001). Manual of Contract Documents for Highway Works, Volume 1, Series 3000 Landscape and Ecology. Accessed June 2020. https://www.standardsforhighways.co.uk/ha/standards/mchw/vol1/pdfs/series_3000.pdf.

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Highways England (2017). Lower Thames Crossing, Environmental Impact Assessment – Scoping Report.

Highways England (2018). Lower Thames Crossing, Preliminary Environmental Information Report – Statutory Consultation.

Highways England (2019). Design Manual for Roads and Bridges GG 103 General Requirements for Sustainable Development and Design. Accessed November 2021. https://www.standardsforhighways.co.uk/dmrb/search/89d10ef2-7833-44df-9140-df85cd6382b9.

Highways England (2020a). Design Manual for Roads and Bridges, LA 107 Landscape and Visual Effects. Revision 2. Accessed March 2020. https://www.standardsforhighways.co.uk/dmrb/.

Highways England (2020b). Design Manual for Roads and Bridges, LA 104 Environmental assessment and monitoring. Revision 1. Accessed July 2022. https://www.standardsforhighways.co.uk/dmrb/.

Highways England (2020c). Design Manual for Roads and Bridges, LD 117 Landscape Design. Revision 0. Accessed November 2021. https://www.standardsforhighways.co.uk/prod/attachments/82073bde-ec0c-4d4f-8eeb-afe0ace3c639?inline=true.

Highways England (2021). Strategic Design Panel Progress Report 4. Accessed June 2021. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/974880/Strategic_Design_Panel_progress_report_4.pdf.

Historic England (2022). National Heritage List for England. Accessed July 2022. https://historicengland.org.uk/listing/the-list/.

Institution of Lighting Professionals (2021). Guidance Note 01/21 – The Reduction of Obtrusive Light.

Jackson, S., Fuller, D., Dunsford, H., Mowbray, R., Hext, S., MacFarlane R. and Haggett, C. (2008). Tranquillity Mapping: developing a robust methodology for planning support. Report to the Campaign to Protect Rural England, Centre for Environmental & Spatial Analysis, Northumbria University, Bluespace environments and the University of Newcastle upon on Tyne.

Joint Nature Conservation Committee (2014). JNCC Report No. 483. The Potential Ecological Impact of Ash Dieback in the UK. Accessed September 2019. https://data.jncc.gov.uk/data/1352bab5-3914-4a42-bb8a-a0a1e2b15f14/JNCC-Report-483-FINAL-WEB.pdf.

Kent County Council (2004). The Landscape Assessment of Kent. Accessed September 2019. https://www.kent.gov.uk/__data/assets/pdf_file/0014/12461/Landscape-Assessment-of-Kent-October-2004_Part1.pdf.

Kent Downs AONB Joint Advisory Committee (2020). Kent Downs Area of Outstanding Natural Beauty Setting Position Statement. Accessed May 2022. https://www.tandridge.gov.uk/Portals/0/Documents/Planning%20and%20building/Planning%20applications%20and%20enforcement/Inquiry-land-off-Oxted-Rd/CD9/9.5-Kent-Downs-AONB-Setting-Position-Statement.pdf?ver=2021-08-02-141604-393.

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Kent Downs AONB Unit (revised and published 2023). Kent Downs AONB Landscape Character Assessment Update 2020. Accessed November 2023. https://kentdowns.org.uk/wp-content/uploads/2023/02/Kent-Downs-AONB-Landscape-Character-Assessment-2020.pdf.

Kent Downs AONB Unit (2021). Kent Downs Area of Outstanding Natural Beauty (AONB) Management Plan 2021-2026. Accessed August 2021. https://kentdowns.org.uk/wp-content/uploads/2021/11/The-Kent-Downs-AONB-Management-Plan-2021-2026-Adopted.pdf.

Landscape Institute (2011). Landscape Institute Advice Note 01/11: Photography and Photomontage in Landscape and Visual Impact Assessment. Accessed November 2021. https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/01/LIPhotographyAdviceNote01-11.pdf.

Landscape Institute (2013). GLVIA3 Statement of Clarification 1/13. Accessed September 2019. https://www.landscapeinstitute.org/technical/glvia3-panel/glvia3-clarifications/.

Landscape Institute (2017). Landscape Institute Technical Information Note, Tranquillity – An Overview. Accessed June 2022. https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2017/02/Tranquillity-An-Overview-1-DH.pdf.

Landscape Institute Technical Guidance Note: Photography and Photomontage in Landscape and Visual Impact Assessment. Public Consultation Draft 2018-06-01. Accessed April 2020. https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2018/06/draft-tin-2018-XX-photography-photomontage-lvia.pdf.

Landscape Institute (2019). Landscape Institute Technical Guidance Note 06/19: Visual Representation of Development Proposals. Accessed April 2020. https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf.

Landscape Institute and Institute of Environmental Management and Assessment (IEMA) (2013). Guidelines for Landscape and Visual Impact Assessment. Third Edition (GLVIA3). Oxfordshire: Routledge.

Maidstone Borough Council (2012, Amended in 2013). Maidstone Landscape Character Assessment. Accessed May 2022. http://services.maidstone.gov.uk/docs/Maidstone%20Landscape%20Character%20Assessment%202012%20(July%202013).pdf.

Marine Management Organisation (2018). Seascape Character Assessment for the South East Inshore marine plan area. Accessed November 2019. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/750229/South_East_-_Seascape_character_assessment_report.pdf.

Medway Council (2011). Medway Landscape Character Assessment. Accessed November 2019. https://www.medway.gov.uk/downloads/file/2340/medway_landscape_character_assessment_main_report_2011.

Ministry of Agriculture, Fisheries and Food (2000). Good Practice Guide for Handling Soils. Accessed March 2020. https://webarchive.nationalarchives.gov.uk/ukgwa/20090317221756/http://www.defra.gov.uk/farm/environment/land-use/soilguid/index.htm.

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Ministry of Housing, Communities and Local Government (2021). National Planning Policy Framework. Accessed October 2021. https://www.gov.uk/government/publications/national-planning-policy-framework--2.

Natural England (2014a). An Approach to Landscape Character Assessment. Accessed September 2018. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691184/landscape-character-assessment.pdf.

Natural England (2014b). National Character Area profiles. Accessed September 2018. https://www.gov.uk/government/publications/national-character-area-profiles-data-for-local-decision-making/national-character-area-profiles.

Natural England and Forestry Commission (2022). Ancient woodland, ancient trees and veteran trees: advice for making planning decisions. Accessed July 2022. https://www.gov.uk/guidance/ancient-woodland-ancient-trees-and-veteran-trees-advice-for-making-planning-decisions.

Planning Inspectorate (2017). Scoping Opinion. Scoping Opinion: Proposed Lower Thames Crossing (Case Reference TR010032). Accessed March 2020. https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010032/TR010032-000033-LTC%20-%20Scoping%20Opinion.pdf.

Land of the Fanns Landscape Partnership Scheme (2016). Land of the Fanns Landscape Character Assessment. Accessed November 2021. https://www.thameschase.org.uk/uploads/Thames_Chase/Trust_Projects/Land_of_the_Fanns/Landscape_Character_Assessment.pdf.

The Ash Project (2022). A Lasting Legacy for the Ash Tree. Accessed June 2022. https://www.theashproject.org.uk/.

Thurrock Council (2005). Thurrock Landscape Capacity Study. Accessed September 2018. https://www.thurrock.gov.uk/sites/default/files/assets/documents/ldf_tech_landscape.pdf.

Woodland Trust (2020). Ash dieback. Accessed June 2022. https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/tree-pests-and-diseases/key-tree-pests-and-diseases/ash-dieback/.

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