Lower Thames Crossing

9.90 Mitigation Route Map

Infrastructure Planning (Examination Procedure) Rules 2010

Volume 9

DATE: September 2023
DEADLINE: 4

Planning Inspectorate Scheme Ref: TR010032
Examination Document Ref: TR010032/EXAM/9.90

VERSION: 1.0

Lower Thames Crossing

9.90 Mitigation Route Map

List of contents

Page number

List of plates

Page number

List of tables

Page number

1 Introduction

1.1 Background

1.1.1 This document has been prepared in response to question ExQ1_Q16.1.4 from the Examining Authority (ExA) which stated that “It would be useful for the ExA and Stakeholders if the Applicant could provide a single document containing a mitigation route map of the controls and mitigation measures that have been identified across a number of documents, which the Environmental Statement (ES) and related documents rely on to avoid, reduce and/or offset significant impacts of the development. The route map should set out the way in which the mitigation measures have been, or will be, translated into clear and enforceable controls; either via Development Consent Order (DCO) Requirements, protective provisions, conditions attached to deemed licences, Section 106 obligations, other consent regimes [such as Section 61 Consents (Control of Pollution Act 1974), or Environmental Permits (Environmental Permitting Regulations 2010)] or side agreements between the Applicant and a third party.”

1.2 Purpose

1.2.1 This environmental mitigation route map does not have a formal status, but rather is intended to help the ExA and Interested Parties to understand how mitigation, relied on in the ES and related documents is secured in the DCO.

1.3 Guide to this document

1.3.1 An overview of the various controls that will be used to secure environmental mitigation commitments relied on the in the ES and related documents is presented in tabular format in Chapter 2. The table states how each of the controls is legally secured.

1.3.2 A brief overview of the individual commitments relied on in the ES and Habitats Regulations Assessment (HRA) [APP-487] is presented and the relevant control by which each commitment is secured is identified in Chapter 3. These are presented in a common format as a series of tables, one for each environmental topic area. This document thus serves to provide an audit trail showing how the commitments relied on in the ES and HRA are secured.

1.3.3 The detail of the commitments as recorded in the various control documents is not duplicated, as the purpose of the table is to present an accessible audit trail and also because of the risk of mirror documentation resulting in potential misunderstandings or errors as any commitments are further developed through the Examination. The Applicant would be pleased to be advised whether this formulation meets the requirements of the ExA.

2 Control Documents

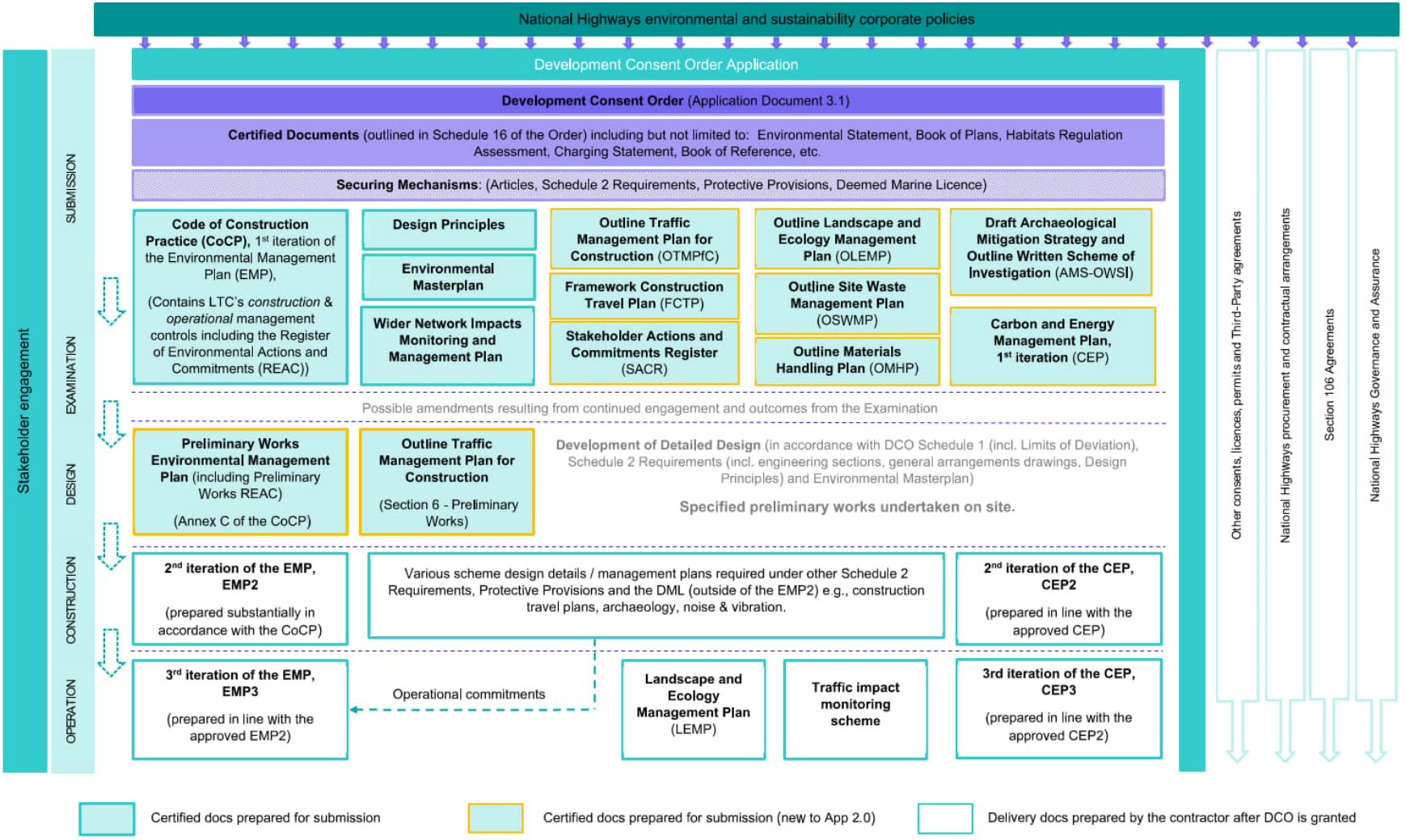
2.1 Overview of the control plan

2.1.1 It is explained in Chapter 14 of the Introduction to the Application [**APP-003**] that the control plan is the framework for mitigating, monitoring and controlling effects of the Project. It is made up of a series of 'control documents' which present the mitigation measures identified in the application (or as subsequently amended during the DCO Examination) that will be implemented during design, construction and operation to reduce the adverse effects of the Project.

2.1.2 In addition, the Consents and Agreements Position Statement (CAPS) [**REP3-079**] identifies the consents and agreements that are expected to be needed by the Project, and sets out the Applicant's intended strategy for obtaining these consents and agreements. The Contractor will obtain any consents required for specific construction activities in accordance with Schedule 2 (Requirements) of the draft DCO [**REP3-077**].

2.1.3 A diagram is provided at Plate 2.1 to illustrate how the individual control documents sit within the overall control plan framework.

Plate 2.1 Control Plan



2.1.4 Table 2.1 provides an overview of the various controls provided and the mechanism by which they are legally secured.

Table 2.1 Control documents

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
DCO			
Draft DCO Schedule 2 (Requirements) [REP3-077]	All	Schedule 2 (Requirements) sets out the conditions the Applicant would be required to accord with when implementing the development. It is subdivided into: • Part 1 – Requirements • Part 2 – Procedure for Discharge of Requirements. • These provisions secure the relevant parts of the Control Document as set out below.	Draft DCO articles 3, 6
Draft DCO Schedule 1 (Authorised Development) and Schedule 4 (Permanent Stopping Up of Streets and Private Means of Access) [REP3-077]	Design development	Schedule 1 (Authorised Development) Part 1 lists the works that would be authorised by the DCO as shown on the Works Plans [APP-018, APP-021, AS-024 to AS-030]. Part 2 lists the works proposed to scheduled monuments. These plans, along with the Tunnels and Limits of Deviation Plans, also contain Limits of Deviation for the said works.	Draft DCO articles 3, 6
Draft DCO Schedule 14 (Protective Provisions) [REP3-077]	All	Schedule 14 (Protective Provisions) includes provisions to protect the interests of various bodies (e.g. statutory undertakers) in the context of the Project. It is subdivided into: • Part 1 – For the Protection of Electricity, Gas, Water and Sewerage Undertakers • Part 2 – For the Protection of Operators of Electronic Communications Code Networks • Part 3 – For the Protection of Drainage Authorities • Part 4 – For the Protection of Railway Interests • Part 5 – For the Protection of Specified Gas Undertakers	Draft DCO article 59

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
		• Parts 6 and 7 – For the Protection of National Grid as Electricity and Gas Undertaker • Part 8 – For the Protection of the Port of London Authority • Part 9 – For the Protection of the Environment Agency (EA) • Part 10 – For the Protection of the Port of Tilbury London Limited.	
Draft DCO Schedule 15 (Deemed Marine Licence) [**REP3-077**]	All	Schedule 15 (Deemed Marine Licence) sets out the terms on which the licence would be granted. The licence authorises the undertaker to carry out any licensable marine activities under section 66(1) of the Marine and Coastal Access Act 2009 which involve the construction, alteration or improvement of any works in or over the sea or on or under the sea bed and which: (a) form part of, or are related to, the authorised development; and (b) are not exempt from requiring a marine licence by virtue of any provision made under section 74 of the 2009 Act. Licensable marine activities would be undertaken subject to conditions set out in Part 4 of the Deemed Marine Licence, which require, for example, approval of method statements and marine pollution contingency plans and specific environmental controls governing matters such as discharge of waste water, spill controls, piling techniques, etc.	Draft DCO article 60
Relevant DCO Certified documents			
General Arrangement Plans; Engineering Drawings and Sections [**REP3-027** to **REP3-031**]; [**REP3-051**, **REP3-053**, **APP-032**, **APP-033**, **REP3-055**, **REP1-035**, **APP-036** and **APP-037**].	Design development	The General Arrangement Plans show an illustration of the Project against an Ordnance Survey base map. The Engineering Drawings and Sections show the proposed road plan and profile including the ground levels, the height of certain structures, the depths of cuttings and tunnels, drainage outfall levels and the indicative location of structures required for the Project.	Draft DCO Schedule 2 Requirement 3

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
Environmental Masterplan [REP2-014, REP3-098, REP2-018, APP-162, REP3-100, REP2-022 to REP2-031]	Design development	The Environmental Masterplan is contained within ES Figure 2.4. It presents the Project's environmental works (mitigation and compensation).	Draft DCO Schedule 2 Requirement 5
Design Principles [REP3-110]	Design development	The Design Principles underpin the Project design. They include embedded mitigation measures and establish parameters which must be met in the final design of the Project.	Draft DCO Schedule 2 Requirement 3
Carbon and Energy Management Plan [APP-522]	All	The Carbon and Energy Management Plan sets out how the Project will minimise its carbon impact during construction and operation. It describes the Project's carbon commitments and establishes a best practice approach to carbon management through the adoption of the PAS 2080 Carbon Management in Infrastructure[1] standard.	Draft DCO Schedule 2 Requirement 16
Stakeholder Actions and Commitments Register [REP1-176]	All	The Stakeholder Actions and Commitments Register (SACR) provides a list of construction and/or design and/or operational related commitments that are not included in other documents or agreements. These include side agreements (agreed with specific stakeholders outside of the DCO), environmental mitigation (as secured in the Register of Environmental Actions and Commitments (REAC)) or measures required within the outline management plans. The SACR does not contain mitigation measures relied on in the ES but is included here for completeness as it may be used to secure environmental measures requested by stakeholders outside of the Environmental Impact Assessment (EIA) sphere. The intention of the SACR is to reduce the need for legal agreements by providing a mechanism for legally securing commitments. It assists stakeholders by obviating time/expense	Draft DCO article 61

[1] British Standards Institution (2016). PAS 2080 Carbon Management In Infrastructure https://www.bsigroup.com/en-GB/our-services/product-certification/product-certification-schemes/pas-2080-carbon-management-in-infrastructure-verification/

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
		associated with legal agreements and speeding up resolution of issues during Examination.	
Code of Construction Practice, First Iteration of Environmental Management Plan and Register of Environmental Actions and Commitments [**REP3-104**]	All	The Code of Construction Practice (CoCP) sets out a framework for the mitigation and management of environmental effects during construction and operation. It aims to ensure that environmental mitigation measures, requirements in the DCO ("DCO Requirements"), and any necessary consents and licences are implemented and complied with to minimise and manage the risk of adverse environmental impacts. The REAC is included within Chapter 7 of the CoCP. It lists the mitigation measures proposed in the ES and other Application Documents and identifies how these are secured in the draft DCO.	Draft DCO Schedule 2 Requirement 4
Outline Site Waste Management Plan [**APP-337**]	Construction – main works	The outline Site Waste Management Plan (oSWMP) (Annex A of the CoCP) sets out the overarching principles and procedures for managing waste during the construction phase. It defines specific roles and responsibilities to ensure waste is managed effectively and covers all works within the Order Limits during construction. Measures include waste segregation and characterisation The Contractor would produce a plan for the management of site waste substantially in accordance with the oSWMP to set out procedures for the characterisation, management and monitoring of waste arisings. This would be part of the Second Iteration of the Environmental Management Plan (EMP2).	Draft DCO Schedule 2 Requirement 4
Outline Materials Handling Plan [**APP-338**]	Construction – main works	The outline Materials Handling Plan (oMHP) (Annex B of the CoCP) sets out the approach and high-level principles for handling construction materials and waste, both inside and outside the Order Limits. The Contractor would produce a plan for the management of materials, substantially in accordance with the oMHP once appointed and more detail is known. This would be part of the EMP2.	Draft DCO Schedule 2 Requirement 4

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
Outline Traffic Management Plan for Construction [REP3-120]	Construction – preliminary works (Section 6); Construction – main works	The outline Traffic Management Plan for Construction (oTMPfC) outlines the approach to carrying out temporary traffic management for the safe construction of the new road and identifies measures available to the Contractor to reduce the impact on the local community. The Contractor would produce a plan substantially in accordance with the oTMPfC for implementation during construction.	Draft DCO Schedule 2 Requirement 10
Framework Construction Travel Plan [APP-546]	Construction – main works	The Framework Construction Travel Plan (FCTP) identifies measures to reduce the impact of the Project's construction workforce on the road network as a result of travel to and from worksites, compounds and Utility Logistics Hubs (ULH). The Contractor would develop Site Specific Travel Plans (SSTPs) in accordance with the FCTP following the latest policy, advice and best practice documents.	Draft DCO Schedule 2 Requirement 11
Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation [APP-367]	Construction – main works	The Draft Archaeological Mitigation Strategy and Outline Written Scheme of Investigation (Draft AMS-OWSI) sets out the essential mitigation for heritage assets and describes the embedded and good practice mitigation measures relevant to cultural heritage. Written Schemes of Investigation (WSI) would be prepared for areas of archaeological interest provisionally identified as requiring mitigation in the AMS-OWSI. The Contractor would produce a plan in accordance with the Draft AMS-OWSI.	Draft DCO Schedule 2 Requirement 9
Preliminary Navigational Risk Assessment [APP-548]	Construction – main works; Operation and Maintenance	The Preliminary Navigational Risk Assessment (pNRA) assesses and quantifies the navigation risk posed by the Project during its construction and operation in relation to construction of temporary and permanent structures, discharge of water and survey of the River Thames and adjoining land.	Draft DCO protective provisions for the benefit of the Port of London Authority (Paragraph 99 of Schedule 14).
Outline Landscape and Ecology Management Plan [REP3-106]	Operation and Maintenance	The outline Landscape and Ecology Management Plan (oLEMP) outlines the proposed management of the landscape and ecological elements of the Project. National Highways' Design Manual for	Draft DCO Schedule 2 Requirement 5

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
		Roads and Bridges (DMRB) GM 701 Series 3000[2] and GS 801 Series 3000[3] establish the general maintenance and inspection requirements for motorways and all-purpose trunk roads. The oLEMP focuses on the management requirements for the land parcels within the Order Limits acquired permanently that perform specific landscape and ecological mitigation functions. It details the management regimes, management expectations and monitoring requirements for each of those land parcels and the typologies contained within. It should be read in conjunction with ES Figure 2.4: Environmental Masterplan. [**REP2-014**, **REP3-098**, **REP2-018**, **APP-162**, **REP3-100**, **REP2-022** to **REP2-031**]. The oLEMP is based on the preliminary Project design to date. A final version of the Landscape and Ecology Management Plan (LEMP) would be developed by the Contractor. The final LEMP would need to be substantially in accordance with the oLEMP, including the habitat management requirements, targets and prescriptions and reflect the Design Principles document and mitigation measures set out in the REAC. It would be based on ES Figure 2.4: Environmental Masterplan.	
Wider Network Impacts Management and Monitoring Plan [**APP-545**]	Operation and Maintenance	The Wider Network Impacts Management and Monitoring Plan (WNIMMP) sets out the approach to monitoring and managing the associated wider network impacts of the Project. This includes a traffic impact monitoring scheme to be carried out prior to opening and in subsequent years to identify changes in road network performance.	Draft DCO Schedule 2 Requirement 14

[2] Standards for Highways (2020). Design Manual for Roads and Bridges GM 701 - Asset delivery asset maintenance requirements. https://www.standardsforhighways.co.uk/search/e0a134c8-f5e2-4f30-9cda-9e43d047f46e

[3] Standards for Highways (2020). Design Manual for Roads and Bridges GS 801 - Asset delivery asset inspection requirements . https://www.standardsforhighways.co.uk/search/6b558352-5c85-4725-b5f2-f796f53d63a8

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
Other Controls			
Section 106 agreements	All	The Applicant is seeking to negotiate section 106 agreements with the host local authorities to agree matters that may be required to make the proposal acceptable in planning terms. At the time of the DCO application submission, draft Heads of Terms were set out [**APP-505**] and are now subject to further discussion. The expectation is for final agreements to be negotiated by Deadline 7 in line with the Examination timetable. Further updates on the status of each section 106 agreement can be found in Appendix B of the CAPS [**REP3-079**].	Section 106 of the Town and Country Planning Act 1990
Environmental Permits and Abstraction Licences	Construction; Operation	Multiple permits or licences will be required, for example for: • Installation/operation/plant operation/solvent emissions activities • Water discharge and/or groundwater activity • Using, treating, storing and disposing of waste • Water abstraction and impoundment. Appendix A of the CAPS [**REP3-079**] provides further detailed information on the likely types of permits required. All permits and licences will be applied for during detailed design.	Regulation 12 of the Environmental Permit (Environmental Permitting (England and Wales) Regulations 2016 (as amended)) Sections 24 and 25 of the Water Resources Act 1991
Other consents	Construction	Section 61 Consents where appropriate for construction works and associated operations to approve further controls for potential disruption and impacts.	Control of Pollution Act 1974
	Construction	European protected species licensing required for the translocation of species in the Order Limits prior to the commencement of construction.	Conservation of Habitats and Species Regulations 2017
	Construction	Consents required for the translocation of species (e.g. water voles) in the Order Limits prior to the commencement of construction.	Schedule 5 of the Wildlife and Countryside Act 1981 (as amended)

Control Document or external control	Phase of Project	Controls Provided	Securing mechanism
	Construction	Badger licence - it may be necessary to undertake the closure and removal of confirmed badger setts during construction. This consent is likely to be required prior to commencement of construction activities.	Protection of Badgers Act 1992 (section 10(1)(d))
	Construction	Mitigation provision for various protected species where specific measures are being secured on land within the Order Limits (e.g. water vole translocation, barn owl habitat mitigation, dormice, reptile translocation).	Conservation of Habitats and Species Regulations 2017; Wildlife and Countryside Act 1981 (as amended) Highways Act 1980 Section 253 Agreement
	Construction	A Self-Service Marine Licence would be required, in addition to the Deemed Marine Licence, for works undertaken in the River Thames or on the foreshore that are not addressed through provisions made in the Deemed Marine Licence. Such works could include reprofiling, moving material, specific construction activities, maintenance, dredging, and the deposit or removal of any substance or object.	Marine and Coastal Access Act 2009
	Construction	Any work with asbestos.	The Control of Asbestos Regulations 2012
	Construction	Discharging trade effluent from welfare facilities.	Trade Effluent Consent under the Water Industry Act 1991
Side agreements between the Applicant and a third party	Operation	Agreements with specific stakeholders. For example, a side agreement with Medway Council is proposed to ensure the provision of pedestrian crossing infrastructure due to severance (Elaine Avenue, Medway). More information is provided in the CAPS [**REP3-079**].	Side agreement

3 Commitments relied on in the Environmental Statement

3.1 Introduction

3.1.1 Each environmental topic chapter of the ES, Chapter 5: Air Quality [**APP-143**] through to Chapter 16: Cumulative Effects [**APP-154**], includes a section entitled 'Project design and mitigation'. In those sections, each of the specific mitigation measures relied upon for the assessments presented in the ES is individually identified with a cross reference to the control documents, such as an item within the REAC presented in Chapter 7 of the CoCP [**REP3-104**], or a clause in the Design Principles [**REP3-110**], where these are secured.

3.1.2 Recognising the ExA's preference for a single document to set out the way in which the mitigation measures relied upon in the ES and related documents have been, or will be, translated into clear and enforceable controls, the Applicant has made a new presentation, in Table 3.1 to Table 3.13 below, cross-referenced to the ES topic chapter and the HRA- Screening Report and Statement to Inform an Appropriate Assessment [**APP-487**], to show how each of the mitigation measures is secured. It provides an overview of commitments arising from each ES topic chapter the HRA and the relevant control by which each of these is secured.

3.2 Environmental topic tables

Table 3.1 Air Quality

Ref	Source	Phase of Project	Purpose of Control / Environmental Feature	Mitigation	Control
AQ1	ES 5.5.8 a-f ES 5.6.6	Construction	Control vehicle and plant emissions	Compliance with emission standards and application of good practice controls	REAC AQ001
AQ2	ES 5.5.9 a-f ES 5.5.10 a-h *(Earthworks and construction)* ES 5.5.10 a-f *(Dust from trackout)* ES 5.5.10 a-l *(Dust management good practice)*	Construction	Control and manage dust	Implement good practice measures and site controls	REAC AQ002, AQ003, AQ004 and AQ005
AQ3	ES 5.5.10 a *(Air quality monitoring during construction)* ES 5.6.5 ES 5.5.10 a *(Baseline dust monitoring)* ES 5.5.10 a i-v *(Actions in case of air quality monitoring exceedance)*	Construction	Air quality and dust monitoring and actions in case of exceedance	Implement monitoring programme	REAC AQ006, AQ007 and AQ008

Table 3.2 Climate

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
C1	ES 15.5.6	Design development	To ensure resource efficient and reflect a circular approach to the use of materials	Waste reduction measures and resource efficiency	Carbon and Energy Management Plan Section 3
C2	ES 15.5.7	Design development	Reduce Greenhouse Gas (GHG) emissions	Application of resource efficiency and circular economy principles	Carbon and Energy Management Plan Section 3
C3	ES 15.5.9	Design development	Reduce GHG emissions	Implementation of hierarchy for GHG emissions	Carbon and Energy Management Plan Section 3
C4	ES 15.5.12-15.5.13	Design development	Reduction in material use and embodied carbon of assets	Reduced the size of, or removed some Project assets	General Arrangement Plans Draft DCO Schedule 2 Requirement
C5	ES 15.5.14-13.5.15	Design development	Reduce GHG emissions	Maintain and enhance connectivity for Walkers, Cyclists and Horse Riders (WCH)	General Arrangement Plans Draft DCO Schedule 2 Requirement Design Principles PEO.01, PEO.04, PEO.05, PEO.09, PEO.010, PEO.011
C6	ES 15.5.16	Design development	Reduce GHG emissions and waste reduction	Use of materials that are renewable, reclaimed or have a recycled content	REAC MW001
C7	ES 15.5.18	Design development	Reduce GHG emissions and waste reduction	Review design to increase efficiency of materials use in production	REAC MW003
C8	ES 15.5.19	Design development	Reduce GHG emissions and waste reduction	Encouragement of a process of assembly rather than no construction onsite	REAC MW004
C9	ES 15.5.20	Design development	Reduce GHG emissions	Project designated a pathfinder project to explore carbon-neutral construction	Carbon and Energy Management Plan Section 3.2
C10	ES 15.5.21	Design development	Reduce GHG emissions	Implementation of carbon reduction measures	Carbon and Energy Management Plan Section 3
C11	ES 15.5.22	Design development	Reduce GHG emissions	Implementation of a carbon limit	Carbon and Energy Management Plan Section 3.5

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
C12	ES 15.5.23-15.5.25	Design development	Reduce GHG emissions	Implementation of carbon reduction measures and technologies	Carbon and Energy Management Plan Appendix D
C13	ES 15.5.32 a	Construction	Climate vulnerability	Use good construction site practice.	REAC CC001
C14	ES 15.5.32 b	Construction	Groundwater protection	Inspect and maintain worksite drainage systems	REAC RDWE002
C15	ES 15.5.32 c	Construction	Surface water management	A construction phase drainage plan shall be developed, and surface water drainage design for temporary works shall include climate change allowances up to 2030.	REAC RDWE006
C16	ES 15.5.32 d	Construction	To manage in the event of necessary road closure or traffic diversions.	Implementation of effective standard operating procedures and extreme weather emergency planning.	CoCP Section 6.10
C17	ES 15.5.35 c	Construction	Flood zone facilities	The northern tunnel entrance compound and Station Road compound to the north of the River Thames, and the southern tunnel entrance compound and Milton compound to the south of the River Thames would be laid out in accordance with a site-specific Flood Risk Assessments (FRA).	REAC RDWE022
C18	ES 15.5.35 d	Construction	Management of flood risk during construction	Provision of compensation to offset temporary floodplain storage losses, managing work site runoff, establishment and layout of construction compounds	REAC RDWE037, RDWE022 and RDWE001
C19	ES 15.5.31 a	Operation	To increase the Project's capacity to cope with future flood risk	The vertical alignment of the carriageway, the design of watercourse crossings and protection measures for the tunnel portals all include appropriate allowance for climate change effects on river flows and water levels in the Thames Estuary. Climate change effects on groundwater resources have also been considered in the design of the Project.	General arrangement plans Draft DCO Schedule 2 Requirement 3

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
C20	ES 15.5.31 b	Operation	To provide aquatic and riparian habitats and improve flood resilience by storing water in the upper catchment of the Mardyke.	At the area at Orsett Fen, new freshwater habitats would be created (ditches and open waterbodies).	Environmental Masterplan Design Principle S12.06
C21	ES 15.5.31 c	Operation	The provide climate change resilience for the flood risk	The Project's drainage would be designed in accordance with Design of Highway Drainage Systems.	REAC RDWE025 Draft DCO Requirement 8
C22	ES 15.5.31 d	Operation	To reduce the risk of causing flooding elsewhere	By using attenuation features. Drainage of operational areas on greenfield sites would be designed to ensure that post-development surface water runoff rates do not exceed existing rates. Where this attenuation is provided via ponds, the ponds would be designed to appear as naturalistic elements within the wider setting, with planting provided to soften edges where this is appropriate.	Figure 2.4: Environmental Masterplan Design principles LSP.16 and LSP.17
C23	ES 15.5.31 e	Operation	To maximise the design life of the signs and signals and to ensure assets stability.	Signs and signals will be designed in accordance with DMRB CD 354 Design of Minor Structures[4]. They will be inspected periodically. Signs and signals will be positioned in accordance with DMRB CD 146 Positioning of Signalling and Advance Direction Signs[5].	Draft DCO Schedule 2 Requirement 3

[4] Standards for Highways (2022). Design Manual for Roads and Bridges CD 354 – Design of minor structures. https://www.standardsforhighways.co.uk/search/d3263218-52b9-48ae-b5a9-2250f17ed613

[5] Standards for Highways (2020). Design Manual for Roads and Bridges CD 146 - Positioning of Signalling and Advance Direction Signs. https://www.standardsforhighways.co.uk/search/ab8e07d2-6785-4a87-8a0e-e6e100fab426

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
C24	ES 15.5.31 f	Operation	To design the tunnel ventilation and drainage with climate change in mind	To take DMRB into account in the detailed design of tunnel ventilation and drainage.	Draft DCO Schedule 2 Requirement 3
C25	ES 15.5.33 a	Operation	To ensure resilience to the effects of projected future climate change	Design the permanent works in accordance with the DMRB standards and use construction materials and products.	REAC CC001
C26	ES 15.5.36 a	Operation	To ensure no increase in flood risk outside the highway boundary	New retention ponds shall be designed as vegetated drainage and will be sized by providing for discharge that is attenuated to the 1 in 1-year greenfield runoff rate for all events up to and including the 1 in 100-year rainfall event with climate change. Attenuation would be by means of vortex controls, orifice plates or a combination thereof. The minimum discharge rate from new retention ponds shall be 1l/s. Discharge rates from existing retention ponds shall be reduced by at least 50% on current discharge rates.	REAC RDWE035
C27	ES 15.5.36 b	Operation	To reduce the risk of inundation of the tunnel	Flood protection would be provided around the North Portal. The flood protection will comprise flood walls, bunds and targeted earthworks. The portal protection would be designed to accommodate a 1 in 1,000-year River Thames extreme tide level event with climate change allowances up to 2130 and a freeboard (residual uncertainties) allowance of 1,000mm.	REAC RDWE029
C28	ES 15.5.36 c	Operation	To manage the intercepted floodplain flows for a 1 in 100-year storm event with	A drainage channel would be provided between the Mardyke and the viaduct abutment immediately to the west of the river.	REAC RDWE040

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
			climate change allowances up to 2130		
C29	ES 15.5.36 d	Operation	To prevent the formation of a new flow path from Golden Bridge Sewer to the Mardyke in Orsett Fen, and to prevent the formation of a new flow path for a 1 in 100-year storm event with climate change allowances up to 2130 and a freeboard allowance of 600mm.	A raised bund would be constructed.	REAC RDWE039
C30	ES 15.5.36 e	Operation	To offset the loss of the flood flow path.	The Project Road would intercept an overland flow path running east to west across East Tilbury Marshes. Three existing culverts would be removed, and one enlarged replacement culvert would be added. A flow control structure would be constructed in West Tilbury Main. This structure would manage flooding levels in East Tilbury Marshes. Watercourse structures would be altered.	REAC RDWE046
C31	ES 15.5.36 f	Operation	To ensure continued functionality of the West Tilbury Main.	An existing blockage of the culvert where Station Road crosses the West Tilbury Main would be cleared and the section of West Tilbury Main running northward from Station Road would be re-established as a flowing watercourse.	REAC RDWE047

Table 3.3 Cultural Heritage

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
CH1	ES 6.5.6	Design development	Avoid or reduce adverse impacts on designated and non-designated heritage assets	Landscape and heritage design mitigation including earthworks and planting	Environmental Masterplan
CH2	ES 6.5.13 a b	Construction	Noise and dust management	Application of good practice noise and dust reduction measures	REAC NV007, AQ002, AQ003, AQ004 and AQ005
CH3	ES 6.5.14 a	Construction	Maintaining integrity of important habitats adjacent to works	Siting of construction work compounds and related features	REAC TB003
CH4	ES 6.5.14 b	Construction	Control of lighting	Design and positioning of lighting	CoCP Section 6.8
CH5	ES 6.5.14 c	Construction	Land reinstatement	Measures to reinstate land	REAC LV002
CH6	ES 6.5.14 d-i	Construction	Screening of construction compounds	Provision of bunds	REAC LV008, LV011, LV015, LV021, LV024 and LV026
CH7	ES 6.5.17 a, 6.5.21	Construction	To provide a framework for cultural heritage mitigation	Production and implementation of the AMS-OWSI	REAC CH001
CH8	ES 6.5.17 b	Construction	Limiting land take for archaeological investigation	Measures to limit land take	REAC CH002
CH9	ES 6.5.17 c	Construction	Archaeological investigation of the cropmark complex scheduled monument at Orsett to be designed in detail	Detailed design for the archaeological investigation of the cropmark complex at Orsett	REAC CH003
CH10	ES 6.5.17 d	Construction	Grade II listed buildings to be recorded in line with good practice	Undertake Level 4 Historic Building Recording and apply for delisting of three listed buildings	REAC CH004
CH11	ES 6.5.17 e	Construction	Protection of heritage assets	Provide protective fencing	REAC CH005
CH12	ES 6.5.17 f	Construction	Covering of heritage assets	Burial of potentially sensitive archaeological remains beneath fill material	REAC CH006

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
CH13	ES 6.5.17 g	Construction	Surveillance of heritage mitigation	Site Specific WSI to set out arrangements for implementing, monitoring and auditing mitigation measures	REAC CH007
CH14	ES 6.5.10 a-d	Operation	Project-wide context and setting of cultural heritage assets	Design for connectivity and integration with the landscape, facilitate interpretation material for historic features	Design Principles PEO.07, STR.01, STR.08, STR.10, LST.02, LST.03, LSP.01, LSP.03, LSP.04, LSP.05 and LSP.07
CH15	ES 6.5.11	Operation	Area-specific context and setting of cultural heritage assets	Area-specific design for connectivity and integration with the landscape	Design Principles S1.02, S1.04, S1.08, S1.16, S2.01, S3.01, S3.05, S3.09, S9.02, S9.05, S11.05, S11.09, S14.02 and S14.09
CH16	ES 6.5.15, 6.5.17 h	Operation	Management of heritage assets	Implement Cultural Heritage Asset Management Plans	REAC CH008

Table 3.4 Cumulative Effects

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
ES Chapter 16: Cumulative Effects [**APP-154**]					
ES Chapter 16 did not rely on any additional mitigation measures beyond those already identified in ES Chapters 5 to 15. All such measures have been identified under the relevant topic headings in Table 3.2 – Table 3.3, and Table 3.5 – Table 3.13 and are not duplicated here.					

Table 3.5 Geology and Soils

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
GS1	ES 10.5.8 a	Construction	To reduce the risk of creating pollutant pathways from contaminated land	Further ground investigation following agreed method statements.	REAC GS001
GS2	ES 10.5.8 b	Construction	To ensure that compound areas are restored	Pre- and post-use survey of land quality in compound areas	REAC GS002
GS3	ES 10.5.8 c	Construction	To manage geohazards	Further ground investigation and maintenance of a geotechnical risk register	REAC GS003
GS4	ES 10.5.8 d	Construction	To prevent pollution from spillages in site compounds	Measures to manage construction compounds where chemical, waste oils or fuel storage and refuelling activities take place.	REAC GS004
GS5	ES 10.5.8 e	Construction	To prevent pollution from spillages when refuelling away from site compounds	Measures to manage refuelling activities on worksites	REAC GS005
GS6	ES 10.5.8 f	Construction	To ensure that materials for re-use meet acceptability criteria	Follow procedures and criteria in the Materials Management Plan	REAC MW007 and GS006
GS7	ES 10.5.8 g ES 10.5.8 h	Construction	To enable sustainable re-use of soils	Soils would be handled and stored in line with good practice. Soil surveys as necessary to determine soil resilience and to develop appropriate soil management procedures.	REAC GS009 and GS010
GS8	ES 10.5.8 i	Construction	To support the land uses in the Environmental Masterplan	Soil to be reused on land identified in the Environmental Masterplan would be restored in accordance with the soil reuse requirements in the soils management procedures. The soil profile created would facilitate drainage and root development.	REAC GS009 and GS011
GS9	ES 10.5.8 j	Construction	To maintain soil function	Following temporary works, soils would be reinstated with the aim of avoiding any reduction in soil function.	REAC GS012

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
GS10	ES 10.5.8 k	Construction	To manage soil resources	A range of measures would be followed to manage soil resources during construction.	REAC GS013
GS11	ES 10.5.8 l	Construction	Soil aftercare	Aftercare monitoring, maintenance and defect correction for a period of five years	REAC GS014
GS12	ES 10.5.8 m	Construction	To be contactable during construction activities on agricultural land	An agricultural liaison officer or deputy would be contactable during construction activities on agricultural land.	REAC GS016
GS13	ES 10.5.8 n	Construction	To provide records of remediated contaminated land	Verification reports of remediation would be produced.	REAC GS016
GS14	ES 10.5.8 o	Construction	To manage risks associated with ground gas	The ground gas regime across the Project would be investigated to inform the design of enclosed and confined spaces to reduce risks to health and to buildings and structures. There would be no public access to confined spaces.	REAC GS018
GS15	ES 10.5.8 p	Construction	To manage the risks associated with unexploded ordnance (UXO)	Appropriate risk assessments and emergency procedures would be implemented.	CoCP Section 6.11
GS16	ES 10.5.8 q	Construction	To prevent the mobilisation of contaminants in groundwater	If dewatering is required, the groundwater would be treated to standards agreed with the EA and subject to an Environmental Permit.	REAC GS022
GS17	ES 10.5.8 r	Construction	To identify and manage risks associated with ground gas at the northern tunnel entrance compound	Prior to the construction of accommodation, a gas assessment would be undertaken to determine the need for gas protection measures.	REAC GS025
GS18	ES 10.5.8 s	Construction	To manage pollution risks associated with foundations	Prepare a detailed foundation risk assessment report during detailed design specific to structures and ground conditions. This would be submitted to the EA for review prior to commencement of that part of the works.	REAC GS026

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
GS19	ES 10.5.8 t	Construction	To appropriately assess residual contamination risks	Develop proposals for site-specific remediation strategies and implementation plans in consultation with the relevant local authorities prior to implementation. The Contractors would have regard for ES Appendix 10.11, Remediation Options Appraisal and Outline Remediation Strategy, which identifies techniques that could be implemented by the Contractors for the remediation of contamination.	REAC GS027
GS20	ES 10.5.8 u	Construction	To prevent the spreading and mobilisation of contaminants in the removal of vegetation, stripping of topsoil, excavation and earth movements.	During earth movement works, a watching brief protocol would be implemented under the supervision of an Environmental Clerk of Works. Site workers would be vigilant to ensure visual or olfactory signs of contamination are noted and that contaminated soil is kept separate from other materials. Appropriate analysis and assessment would be undertaken by a suitably qualified person on suspected contaminated soils to establish the action required.	REAC GS028
GS21	ES 10.5.12 a	Construction	To safeguard capping layer on landfill and minimise risk of liquid waste being brought to the surface.	Vehicle movements and types would be restricted to reduce damaging the integrity of the cap and wider environment. Temporary access route would be removed as soon as it is no longer required.	REAC GS020
GS22	ES 10.5.12 b ES 10.5.12 c	Construction	Potential to draw contaminants and saline water during excavation works.	Construction of a deep barrier around the excavations to reduce groundwater ingress and supplementary mitigation measures.	REAC GS021
GS23	ES 10.5.12 d	Construction	To safeguard construction workers from build-up of gases during construction and excavation activities for the tunnel and North Portal.	Detailed design would establish appropriate and safe procedures and working methods including gas monitoring.	REAC GS023

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
GS24	ES 10.5.12 e	Construction	To reduce the risk of blow-out and spread of grout during tunnelling.	Consult the EA on measures to reduce risk.	REAC GS024
GS25	ES 10.5.12 f	Construction	To prevent stockpiled clean chalk contaminating underlying soils and groundwater.	Stockpile design would be agreed with Secretary of State (SoS) in consultation with the EA.	REAC GS029
GS26	ES 10.5.12 g	Construction	To prevent the potential disturbance of residual contamination the construction works would not disturb remediation works at the site of a former petrol station.	Prior to the construction works the EA will be consulted on the works.	REAC GS030
GS27	ES 10.5.12 h	Construction	To prevent impact on a potential Local Geological Site during construction.	Excavations where Local Geological site is present would be restricted. Figure 4 Proposed restricted area Annex A, ES Appendix 10.3 Site Walkover Factual Report [**APP-424**] shows the area that would be subject to restrictions.	REAC GS031
GS28	ES 10.5.9 a	Operation	Good practice of relevance.	Findings of the verification report would be available for inclusion within the operations Health and Safety file (or equivalent).	REAC GS016 and GS017
GS29	ES 10.5.9 b	Operation	To reduce the risk of contamination migration across the wider area or entering controlled waters.	If any incident occurs resulting in localised contamination, soils which had become significantly affected would be assessed and, if necessary, removed.	REAC GS019
GS30	ES 10.5.10	Operation	Risks associated with ground gas.	Design measures implemented as part of the construction phase would provide protection during the operational phase.	REAC GS018 and GS025
GS31	ES 10.5.13	Operation	To reduce water infiltration into tunnel bores and cross passages.	Appropriate measures to reduce water infiltration including gaskets and membranes compliant with the Project tunnelling specification.	REAC RDWE027

Table 3.6 Habitats Regulations Assessment

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
HRA1	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.5)	Construction	To avoid changes in surface water quality and quantity	Water discharged into the Thames Estuary and Marshes Ramsar site western ditch from the southern tunnel entrance compound would be treated to a specified standard.	REAC RDWE033
HRA2	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.9 - 7.1.10)	Construction	To avoid and reduce changes in noise and vibration	Noise attenuation measures to control noise levels within the Thames Estuary and Marshes SPA/Ramsar site or any land functionally linked to it.	REAC HR004 and HR005
HRA3	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.13 - 7.1.17)	Construction	To avoid visual disturbance	Commitment to timing constraints on specific construction activities; and to avoid visual disturbance effects during the overwintering period within the Thames Estuary and Marshes Ramsar site and functionally linked land associated with the Thames Estuary and Marshes SPA and Ramsar site.	REAC HR001, HR002, HR004, HR005 HR006 and HR012
HRA4	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.20)	Construction	To reduce effects of land take and disturbance	Commitment to timing constraints during severe winter weather and avoids effects on qualifying species using functionally linked land associated with the Thames Estuary and Marshes SPA and Ramsar site.	REAC HR003
HRA5	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.21 – 7.1.31)	Construction	To reduce effects of land take and disturbance	Provision of enhanced habitat areas to avoid and reduce the effect of habitat loss and disturbance within the functionally linked land associated with the Thames Estuary and Marshes SPA and Ramsar site and commitment to ensure a water supply for the habitat created.	Design Principle S9.13 REAC HR007, HR010 and HR011

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
HRA6	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.32)	Operation	To reduce effects of land take and disturbance	Continued enhanced functionality during operation	Design Principle S9.13
HRA7	HRA Screening Report and Statement to Inform an Appropriate Assessment (para 7.1.39 – 7.1.40)	Operation	To reduce recreational disturbance	Provision of public access at Tilbury Fields including visitor-management commitments which aim to avoid and reduce recreational disturbance of qualifying features using the functionally linked intertidal habitat.	Design Principles S9.02 and S9.18

Table 3.7 Landscape and Visual

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV1	ES 7.5.6	Design development	Planting strategy	Describes use of trees, shrub and grassland species for use as landscape mitigation	Design Principles
LV2	ES 7.5.7	Design development	Spatial extent and location of environmental mitigation	Landscape design mitigation to integrate the Project into the surrounding landscape	Environmental Masterplan and Design Principles
LV3	ES 7.5.10	Design development	Design of long-term management of landscape	Detailed LEMP would be developed from the oLEMP during detailed design.	oLEMP Design Principles REAC
LV4	ES 7.5.20	Design development	Planting – screening	Opportunities shall be sought in detail design to screen visual appearance of any existing visual detractors.	Design Principle LSP.26
LV5	ES 7.5.11 a	Construction	Reduce land acquisition	Return construction working areas to landowners	Draft DCO Article 35
LV6	ES 7.5.11 b	Construction	Reduce loss of existing vegetation	Protection and retention of vegetation	Environmental Masterplan

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV7	ES 7.5.11 c ES 7.5.13 / Table 7.12	Construction	Land reinstatement	Land temporarily impacted would be reinstated.	Design Principle LSP.05 REAC LV002
LV8	ES 7.5.13 / Table 7.12	Construction	Work site hoarding and site lighting	Lighting and hoardings will be designed and positioned to prevent visual disturbance to nearby residents.	CoCP Sections 6.7 and 6.8
LV9	ES 7.5.13 / Table 7.12	Construction	Maintaining integrity of important habitats adjacent to works	Construction work compounds and related features would not be located within important habitats. Temporary fencing would be used for demarcation.	REAC TB003 and TB004
LV10	ES 7.5.13 / Table 7.12	Construction	Planting	The use of plastic tree guards would be avoided in favour of biodegradable options where available.	REAC LV004
LV11	ES 7.5.13 / Table 7.12	Construction	Environmental Clerk of Works	Employment of a suitably qualified and experienced Environmental Clerk of Works throughout construction	REAC TB006
LV12	ES 7.5.13 / Table 7.12	Construction	Soil management	Soil handling, storage and reinstatement	REAC GS009 to GS013
LV13	ES 7.5.13 / Table 7.12	Construction	Screening of construction compounds	Provision of bunds to facilitate visual screening	REAC LV008, LV011, LV015, LV017, LV021, LV024 and LV026
LV14	ES 7.5.18 / Table 7.14	Construction	Hedgerow replacement	Hedgerow habitat lost during construction would be compensated	REAC TB001
LV15	ES 7.5.18 / Table 7.14	Construction	Trees and vegetation retention and protection	Aim to reduce the removal of trees and vegetation, and tree protection measures	REAC LV001, LV013, LV028, LV030 and LV031
LV16	ES 7.5.18 / Table 7.14	Construction	Siting of construction compounds	No main compounds would be located within the Kent Downs Area of Outstanding Natural Beauty (AONB)	REAC LV005

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV17	ES 7.5.18 / Table 7.14	Construction	Construction compound facilities	Maximum height measures and locations of construction compound facilities within construction compounds	REAC LV006, LV007, LV010, LV012, LV016, LV018, LV019, LV020, LV022, LV023, LV025 and LV027
LV18	ES 7.5.18 / Table 7.14	Construction	Construction compound stockpiles	Locations of stockpiles and phasing of works	REAC LV009 and LV033
LV19	ES 7.5.8	Operation	Landscape management for permanently acquired land parcels	Long-term management of the landscape and ecological elements of the Project	oLEMP and Environmental Masterplan
LV20	ES 7.5.12 / Table 7.11	Operation	Project-wide landscape setting for planting and vegetation	Design for connectivity and integration of the Project with the landscape	Design Principles LSP.01, LSP.02, LSP.03, LSP.04, LSP.07, LSP.09, LSP.10, LSP.13, LSP.14, LSP.17, LSP.18, LSP.19, LSP.20, STR.17, STR.10, LST.02 and LST.03
LV21	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape setting for planting and vegetation in Section 1 – A2/M2 Corridor	Area-specific design for connectivity and integration of the Project within the A2/M2 Corridor landscape	Design Principles S1.03, S1.08, S1.16, S1.04, LSP.02, LSP.04, LSP.11, LSP.15, LSP.19, S1.01, S1.02, S1.06, S1.07, S1.10, S1.11, S1.13, S1.14, LSP.20, S1.12, LSP.13 and LSP14

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV22	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 2 – M2/A2/A122 Lower Thames Crossing junction	Area-specific design for connectivity and integration of the Project within the M2/A2/A122 Lower Thames Crossing junction landscape	Design Principles LSP.09, S2.04, S2.09, LSP.02, LSP.11, LSP.15, LSP.20, S2.01, LSP.04, LSP.10, LSP.19, S2.01, S2.03, S2.06, LSP.13, LSP.14, LSP.17 and S2.08 Engineering Drawings and Sections
LV23	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 3 – Gravesend link and South Portal	Area-specific design for connectivity and integration of the Project within the Gravesend link and South Portal landscape	Design Principles S3.01, STR.02, LSP.18, S3.03, S3.11, S3.10, S3.16, LSP.02, LSP.11, LSP.15, LSP.20, S3.04, S3.08, LSP.04, LSP.11, LSP.19, S3.02, S3.07, S3.15, LSP.13, LSP.14, S3.05, S3.09, LSP 17 and S3.06
LV24	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 9 – Tilbury Marshes and North Portal	Area-specific design for connectivity and integration of the Project within the Tilbury Marshes and North Portal landscape	Design Principles S9.16, S9.02, LSP.02, LSP.11, LSP.15, LSP.20, LSP.04, LSP.10, S9.11, S9.10, LSP.13, LSP.14, LSP.17, S9.13, S9.14 and STR.02

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV25	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 10 – Chadwell link	Area-specific design for connectivity and integration of the Project within the Chadwell link landscape	Design Principles LSP.09, S10.01, S10.03, LSP.02, LSP.11, LSP.15, LSP.20, LSP.04, LSP.19, S10.02, S10.04, S10.05, S10.07, LSP.13, LSP.14, LSP.17 and S10.08
LV26	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 11 – A13 junction	Area-specific design for connectivity and integration of the Project within the A13 junction landscape	Design Principles LSP.09, S11.09, S11.11, S11.03, LSP.02, LSP.11, LSP.15, LSP.20, S11.01, S11.06, LSP.04, LSP.10, S11.05, S11.08, LSP.13, LSP.14, S11.07 and LSP.17 Engineering Drawings and Sections
LV27	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Section 12 – Ockendon link	Area-specific design for connectivity and integration of the Project within the Ockendon link landscape	Design Principles S12.01, LSP.09, STR.04, S12.03, S12.04, S12.13, LSP.02, LSP.11, LSP.15, LSP.20, S12.11, LSP.04, S12.02, S12.10, S12.12, S12.14,

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
					LSP.13, LSP.14, LSP.17, S12.06 and S12.07 Engineering Drawings and Sections
LV28	ES 7.5.12 / Table 7.11	Operation	Area-specific landscape integration and visual screening in Sections 13 & 14 M25 junctions	Area-specific design for connectivity and integration of the Project within the M25 junctions' landscape	Design Principles LSP.09, S14.06, LSP.02, LSP.11, LSP.15, LSP.20, LSP.04, LSP.10, LSP.19, S14.01, S14.02, S14.07, S14.13, S14.14, LSP.13, LSP.14, LSP.17 and S14.09 Engineering Drawings and Sections
LV29	ES 7.5.14 ES 7.5.15 ES 7.5.16	Operation	Landscape maintenance	Detailed LEMP to be produced for vegetation establishment and subsequent management.	REAC LV003 Requirement 5 of Draft DCO
LV30	ES 7.5.19 / Table 7.15	Operation	Landscape earthworks	All false cuttings shall have rounded crest tops.	Design Principle LSP.09
LV31	ES 7.5.19 / Table 7.15	Operation	Integration of infiltration basins and retention ponds	Infiltration basins shall be designed to appear naturalistic within the wider setting.	Design Principle LSP.17
LV32	ES 7.5.19 / Table 7.15	Operation	Blending of earthworks	Earthworks shall be designed to integrate in a naturalistic way within the wider setting.	Design Principle LSP.17

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
LV33	ES 7.5.19 / Table 7.15	Operation	Landscape planting	Planting identified on the Environmental Masterplan	REAC LV029 Environmental Masterplan
LV34	ES 7.5.19 / Table 7.15	Operation	Bridge structures	Detailed design of bridge structures	Design Principles STR.01 to STR.08 and STR.11
LV35	ES 7.5.19 / Table 7.15	Operation	Barriers and fences	Materiality and appearance of barriers and fences	Design Principles STR.09 and STR.10
LV36	ES 7.5.19 / Table 7.15	Operation	Highways furniture	Materiality and appearance of highways furniture	Design Principle LST.01
LV37	ES 7.5.19 / Table 7.15	Operation	Retaining structures and bridge abutments within Kent Downs AONB	Retaining structures and bridge abutments within the Kent Downs AONB and its setting, shall be reflective of the local vernacular.	Design Principle S1.09
LV38	ES 7.5.19 / Table 7.15	Operation	Planted earthworks within the A13 junction	Within the islands of the A13 junction, earthworks shall be softened to appear more naturalistic and integrated into the landscape.	Design Principle S11.01
LV39	ES 7.5.19 / Table 7.15	Operation	Planting – views/vistas	Detail design shall aim to maintain and retain key views/vistas.	Design Principle LSP.24, LSP.27, S1.18, S1.22, S1.19, S1.20, S1.21, S2.13, S2.14, S3.19, S10.14, S14.16, S14.17 and S14.18
LV40	ES 7.5.19 / Table 7.15	Operation	Planting – openness	The planting of larger tree and/or shrub species shall maintain a sense of openness.	Design Principle LSP.25

Table 3.8 Marine Biodiversity

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
MB1	ES 9.5.6	Design development	Scour protection	Minimum tunnel cover of 0.9 tunnel diameter (14.4m)	REAC RDWE041
MB2	ES 9.5.7	Design development	Scour protection and changes to sediment processes	Operational drainage design	RDWE011
MB3	ES 9.5.8 a-f	Construction	Water management / pollution prevention and control	Construction drainage design and pollution prevention measures	RDWE023, RDWE002, RDWE005, RDWE006 and GS004
MB4	ES 9.5.9	Operational	Water quality	Drainage treatment	RDWE012
MB5	ES 9.5.11 a	Construction	Water quality in the Thames	Construction of discharge pipeline and outfall	RDWE028 and RDWE023
MB6	ES 9.5.11 b	Construction	Avoidance of underwater noise effects	A range of measures as agree with Marine Management Organisation (MMO)	RDWE024
MB7	ES 9.5.11 c	Construction	Maximise dispersion of discharge	Subtidal outfall structure	RDWE028
MB8	ES 9.5.11 d-e	Construction	Avoidance of disturbance effects	A range of measures as agree with MMO	MB001, MB002, MB003 and HR002
MB9	ES 9.5.11 f	Construction	Invasive Non-Native Species	Preparation of a marine biosecurity plan	MB006
MB10	ES 9.5.12 a	Operational	Water quality	High tide discharges to maximise dispersion	RDWE026
MB11	ES 9.5.12 b	Operational	Eel passage	Eel-friendly design	HR010

Table 3.9 Material Assets and Waste

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
MW1	ES 11.5.13 a	Design development	Minimise use of primary materials	Materials that are renewable, reclaimed or have a recycled content would be specified.	REAC MW001
MW2	ES 11.5.13 b	Design development	Responsible sourcing	Priority would be given to the proximity principle. Imported materials would be sustainably sourced and managed.	REAC MW002
MW3	ES 11.5.13 c	Design development	Materials optimisation	Investigate opportunities for standardised construction	REAC MW003
MW4	ES 11.5.13 d	Design development	Encourage on-site assembly rather than construction	Investigate the use of pre-fabricated structures and components	REAC MW004
MW5	ES 11.5.13 e	Design development	Reuse demolition materials	Carry out pre-demolition surveys to identify potential	REAC MW005
MW6	ES 11.5.13 f	Design development	Use site-won excavated materials	Identify what site-won excavated materials can be used as Class I-IV material or aggregate	REAC MW008
MW7	ES 11.5.23	Design development	Minimise demand for material and the amount of waste sent to landfill	Identify enhancement opportunities relevant to materials and waste	REAC MW016
MW8	ES 11.5.14	Construction	Implement good-practice measures for waste management	Implement the waste hierarchy	REAC MW006 and MW007
MW9	ES 11.5.15	Construction	Enhance recovery and recycling rates and minimise the quantities of waste	Implement the Site Waste Management Plan (or equivalent), comply with relevant regulations, segregate waste streams and store appropriately, limit packaging, avoid stockpiling materials, prohibit the burning of waste. Detailed design to limit material demand and the amount or waste sent to landfill.	REAC MW010

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
MW10	ES 11.5.19 a i	Construction	To limit inert excavated material destined for offsite waste management going to landfill	Through reuse, recycling and/or recovery, a minimum of 95% (by weight) of inert excavation wastes and a minimum of 95% (by weight) of inert construction and demolition waste destined for offsite waste management outside the Order Limits would be diverted from final disposal in landfill.	REAC MW011
MW11	ES 11.5.19 a ii	Construction	To use sustainable waste management facilities and schemes	Offsite facilities and/or schemes that score positively against the sustainability scoring system would be identified.	REAC MW012
MW12	ES 11.5.19 a iii	Construction	To limit non-hazardous excavated material destined for offsite waste management going to landfill	Through reuse, recycling and/or recovery, a minimum of 70% (by weight) with a target of 90% (by weight) of non-hazardous excavated wastes and a minimum of 70% (by weight) with a target of 90% (by weight) of non-hazardous construction and demolition waste destined for off-site waste management outside the Order Limits would be diverted from final disposal in landfill.	REAC MW013
MW13	ES 11.5.19 a iv	Construction	To limit hazardous waste going to landfill	Where practicable, remediation or treatment of hazardous construction waste within the Order Limits or offsite at third-party facilities.	REAC MW015
MW14	ES 11.5.16	Operation	To reduce the quantities of waste requiring offsite management, to enhance recycling and recovery rates and to minimise the generation of hazardous waste	Implement the Site Waste Management Plan (or equivalent), comply with relevant Regulations, segregate waste streams and store appropriately, limit packaging, avoid stockpiling materials, prohibit the burning of waste. Detailed design to limit material demand and the amount or waste sent to landfill.	REAC MW010

Table 3.10 Noise and Vibration

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
NV1	ES 12.5.6 a ES Table 12.27	Design development	Acoustic screening	Earthworks features and bunding	REAC LV008, LV011, HR005, LV015, LV017, LV021, LV023, LV024 and LV026
NV2	ES 12.5.6 b	Design development	Disturbance	300m restricted zone for any bulk earthwork works being undertaken during the evening period, up to 22:00, over the summer months	CoCP Table 6.1
NV3	ES 12.5.8 b ES Table 12.28	Design development	To reduce significant environmental effects including for noise, and landscape and visual	Alignment of the Project has been located within cuttings and/or false cuttings/bunds where practicable	Environmental Masterplan Design Principles STR.10, S11.05, S11.09 and S14.06
NV4	ES 12.5.9	Design development	To reduce adverse impacts for noise, landscape and visual, soils, construction and engineering limitations	Earthwork features	General arrangement plans Draft DCO Schedule 2 Requirement 3
NV5	ES 12.5.10	Design development	Supporting the earthwork features and low noise surfacing provision	Acoustic fencing	Environmental Masterplan REAC NV011
NV6	ES 12.5.11 ES Table 12.28	Design development	Reduce noise impacts	Earthwork bunds and false cuttings	Environmental Masterplan

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
NV7	ES 12.5.13 a-m	Construction	Noise and vibration level controls	Application of construction good practice measures	REAC NV001, NV002, NV003, NV004, NV005, NV006, NV007, NV007, NV008, NV009, NV010, NV012, NV015 and NV017 Section 61 control, Section 72 control,
NV8	ES 12.5.14 ES 12.5.15	Operation	Reduction in road traffic noise	All new and altered roads associated with the Project will be surfaced with a Thin Surface Course or Low Noise Surface (LNS).	REAC NV013
NV9	ES 12.5.16	Operation	Reduce impact of noise on nearest residential areas or sensitive receptors	The LAr,Tr (rating level) noise emitted from operational fixed plant and associated with any noise generating element of the tunnel service buildings shall not result in exceedance of the existing LAr,Tr (rating level) background level by more than 0dB(A).	REAC NV014
NV10	ES 12.5.17 a-e	Operation	Noise from pylon fittings	Technical specifications, policy and guidance documents	REAC NV016
NV11	ES 12.5.20	Construction	Reduce impact of noise	A 300m restriction zone implemented around residential or sensitive receptors	Appendix 2.2: CoCP (Table 6.1)
NV12	ES 12.5.21	Operation	Reduce impact of noise	Pavement surfaces and acoustic fencing	REAC NV013
NV13	ES 12.5.24-25 ES Table 12.29	Operation and design development	Protect residential amenity, reduce noise to a minimum, prevent the introduction of new landscape and visual impacts and provides mitigation to isolated sensitive receptors and areas of tranquillity (dependent on location).	Install acoustic barriers	REAC NV011 Design Principles STR.04, STR.06, STR.07, STR.09, STR.10, S10.05, S11.05 and LSP.09

Table 3.11 Population and Human Health

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
PH1	ES 13.5.6 a	Design development	Requirement of temporary land use during construction	Only take this land for the period it is required and hand this back to the landowner at the earliest opportunity.	Statement of Reasons / Draft DCO Article 35
PH2	ES 13.5.6 b	Design development	Requirement of temporary land use during construction	Reinstatement of land utilised during construction to its original use as far as technically practicable in consultation with the landowner.	Design Principle LSP.05
PH3	ES 13.5.6 d	Design development	Loss of access to property	An alternative means of access provided	Draft DCO Schedule 3, Article 12 and Schedule 4, Article 14 of the draft DCO
PH4	ES 13.5.6 e	Design development	Requirement of land use for construction and operation of the project.	Compensation to relevant landowners.	Compensation Code as set out in the Statement of Reasons. Draft DCO Article 35
PH5	ES 13.5.6 f	Design development	Minimise the number of traffic management changes and the closures and use of diversion routes during construction	Traffic Management Plan for Construction (TMP)	oTMPfC Table 2.3
PH6	ES 13.5.6g i	Design development	Impacts to WCH routes during construction	Realignment of WCH route	Design Principle S1.05
PH7	ES 13.5.6 g-ii	Design development	Impacts to WCH routes during construction	Re-routing of WCH route	Design Principle S3.13
PH8	ES 13.5.8 ES 13.5.9	Design development	Mitigate temporary or permanent land loss in open spaces	Identification of replacement land	Design Principles
PH9	ES 13.5.10	Design development	Reduce impacts on Gravesend Golf Centre	Replacement recreational land	Design Principle S3.17

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
PH10	ES 13.5.11	Design development	Loss of Gammonfields Way travellers' site	Replacement land	Design Principle S11.12. Draft DCO Requirement 13
PH11	ES 13.5.12	Design development	Maintain and enhance connectivity for WCH and to create habitat corridors	Creation of green bridges	Design Principle STR.08
PH12	ES 13.5.13	Design development	Impacts on existing PRoWs	Provision of under- or overbridges, or a suitable alternative provision	Design Principles Section 2.1.1
PH13	ES 13.5.14 a-e	Design development	Facilitate user experience of PRoWs	Improvement of access to PRoWs, design improvements, clear signage and designed in accordance with standards and guidance	Design Principles PEO.01 to PEO.04 and PEO.06
PH14	ES 13.5.15	Design development	Restore PRoWs severed by the Project	Looping walks connecting recreational areas	Design Principle S2.02
PH15	ES 13.5.15	Design development	Restore PRoWs severed by the Project	Diversion of PRoW route	Design Principle S9.17
PH16	ES 13.5.15	Design development	Minimise the impact on users of PRoW and retain the open views across the fen	Viaduct designed to maximise space and clearance underneath	Design Principle S12.04
PH17	ES 13.5.15	Design development	Restore PRoWs severed by the Project	Creation of a connected network of links and accessible vibrant green spaces	Design Principle S14.04
PH18	ES 13.5.16	Design development	Generate a positive legacy of green infrastructure	Provision of a recreational landscape	Design Principle S3.04
PH19	ES 13.5.17	Design development	Generate a positive legacy of green infrastructure	Creation of a new public park	Design Principle S9.02
PH20	ES 13.5.18 a	Design development	Prevent members of public approaching fishing lake	Provision of dense shrub planting	Design Principle S14.14
PH21	ES 13.5.18 b	Design development	Improved access to the Project	Design of proposed temporary construction and permanent maintenance access for the Project	Design Principle S14.19

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
PH22	ES 13.5.18 c	Design development	WCH connectivity improvements	An alternative WCH solution	Design Principle S14.22
PH23	ES 13.5.19	Construction	Soil management	Procedures for the management of soil resources	REAC GS009 to GS010
PH24	ES 13.5.19	Construction	Soil management	Procedures relating to soil reinstatement and aftercare	REAC GS011 to GS014
PH25	ES 13.5.19	Construction	Reducing impacts on agricultural land	An agricultural liaison officer or named deputy	REAC GS015
PH26	ES 13.5.19	Construction	Reducing human health risks on construction workers	Site-specific security risk assessments	CoCP Section 6.7.3
PH27	ES 13.5.19	Construction	Invasive Species Management	Invasive species will be removed or treated to prevent their spread.	REAC TB005
PH28	ES 13.5.19	Construction	Reduce impacts of construction compounds on residential properties	Consideration of the location of construction compound facilities greater than 6m in height	REAC LV006, LV007, LV010, LV012, LV016, LV018, LV019, LV020, LV022, LV025 and LV027
PH29	ES 13.5.19	Construction	Reduce impacts on WCHs	Construction works would be planned to reduce the durations that footpaths, cycleways and bridleways would need to be closed.	REAC PH001
PH30	ES 13.5.19	Construction	Improve engagement and communications with stakeholders, local authorities, local residents and communities	A community helpline and the establishment of Community Liaison Groups	CoCP Section 5
PH31	ES 13.5.19	Construction	Reduction of impacts on residents	Activities outside normal working hours that could give rise to disturbance will be kept to a reasonably practicable minimum.	CoCP Section 6.4
PH32	ES 13.5.19	Construction	Reducing the impact of the Project on the amenity of local	See noise and vibration and air quality sections for details	Examples NV008, AQ002 and AQ003

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
			residents by virtue of noise and dust.		
PH33	ES 13.5.19	Construction	Reduction of impacts on residents	Compliance with the Considerate Constructors Scheme's (CCS) CoCP	CoCP Section 2.4
PH34	ES 13.5.20	Construction	Design and management of construction traffic management and transport logistics	Temporary diversion routes for PRoW will involve engagement with the relevant highway authority	REAC PH001
PH35	ES 13.5.21	Construction	Minimise adverse local disruption or traffic impacts on the highway network	Reducing the number of single-occupancy vehicle trips and encouraging the uptake of sustainable and active modes of travel	FCTP
PH36	ES 13.5.23	Construction	Improving / ensuring access to community facilities	Construction traffic management and community engagement	CoCP Sections 6.2 and 6.3 oTMPfC
PH37	ES 13.5.24	Construction	Uptake of accommodation	Accommodation Helpdesk, accommodation database and Workforce Accommodation Working Group	FCTP and SEE Strategy (appended to Section 106 Agreements – Heads of Terms
PH38	ES 13.5.25	Construction	Encourage a higher proportion of locally employed workers	Incentivise workers to live in areas which have higher capacity	FCTP Draft DCO Requirement 11
PH39	ES 13.5.26 ES 13.5.27	Construction	Provision of appropriate accommodation	Accommodation Helpdesk	CoCP Para 6.6.10 FCTP Draft DCO Requirement 11
PH40	ES 13.5.28	Construction	Reduce noise, vibration and dust disposal impacts at sensitive residential receptors	Plan daytime and night-time construction works	CoCP Section 6.4

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
PH41	ES 13.5.29 a-c	Construction	Ensure farm access during construction	Main Works Contractor shall ensure that the farmer is provided with controlled access to their retained land. Maintenance of controlled access for farm vehicles	SACR SACR-005, SACR-003 and SACR-004
PH42	ES 13.5.30	Operation	Ensuring health, safety, security and the wellbeing of workforce, employees, road users and local communities is maintained.	Behavioural safety techniques, training, physical measures such as lane closures, speed restrictions and enforcement, and planning for and provision of adequate time, space and resources	CoCP Section 6
PH43	ES 13.5.31	Operation	Reduce noise and visual impacts	Noise barriers, low noise surfacing and additional planting	REAC NV015
PH44	ES 13.5.35	Construction	Meet the physical and mental health needs of the construction workforce	Provision of healthcare services for the construction workforce	REAC PH002
PH45	ES 13.5.36	Construction	Managing community anxieties and uncertainties about construction activities and associated environmental effects	Engagement and communication with local residents and communities	CoCP Section 5
PH46	ES 13.5.39 a	Operation	Provision of recreational access to the PRoW network and open spaces	Provision of a new car park area to the west of Thong Lane	Design Principle S2.11
PH47	ES 13.5.39 b ES Table 13.54	Operation	Improve access to the existing network and to increase access for users	Provision of new routes for WCH	Design Principles S9.05, S9.18, S9.19, S9.20, S10.09, S11.13, S11.14, S11.15, S12.08, S12.09, S12.15 and S14.11

Table 3.12 Road Drainage and Water Environment

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
RDWE1	ES 14.5.9 a	Design development	Maintain access for EA	Provide bankside access to main rivers	Design Principle S12.05
RDWE2	ES 14.5.9 b	Design development	Flood attenuation	Sustainable drainage systems and naturalistic flood attenuation	Environmental Masterplan Design Principles LSP.16, LSP.17 and LSP.28
RDWE3	ES 14.5.9 c	Design development	Receiving water quality	Design of treatment and discharge facilities	REAC RDWE025
RDWE4	ES 14.5.9 d	Design development	Reduce flood risk	Design of flood storage and flow controls	Environmental Masterplan REAC RDWE037, RDWE039 and RDWE040
RDWE5	ES 14.5.9 e	Design development	Freshwater and wetland compensation habitat	Habitat provision	Environmental Masterplan Design Principles S12.06 and S9.13
RDWE6	ES 14.5.9 f	Design development and Construction	Water bodies at nitrogen deposition compensation sites	Protect existing flows, retain existing ponds and water bodies	Control under review
RDWE7	ES 14.5.9 g	Construction and Operation	Water quality at nitrogen deposition compensation sites	Controlled use of fertiliser and pesticides	Control under review
RDWE8	ES 14.5.9 h	Design development	Natural ponds	Creation of new ponds	Environmental Masterplan Design Principle LSP.31
RDWE9	ES 14.5.9 i	Design development	Realigned channels	Naturalised form following historic ditch patterns	Design Principle S9.10
RDWE10	ES 14.5.9 j	Design development	Mammals using watercourses	Provide mammal ledges and underpasses	Design Principle S9.10 REAC RDWE044

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
RDWE11	ES 14.5.9 k	Design development	Aquifer	Junction design to reduce groundwater drawdown and draining of aquifer	REAC RDWE038
RDWE12	ES 14.5.10 a	Construction	Permits	Secure and comply with relevant environmental permits and consents for construction works as detailed in CAPS.	Environmental Permits and Abstraction Licences
RDWE13	ES 14.5.10 b	Construction	Construction flood risk	Undertake construction phase FRA	REAC RDWE001
RWDE14	ES 14.5.10 c-f	Construction	Construction water management	Construction site design and management	REAC RDWE002, RDWE004, RDWE005 and RDWE006
RWDE15	ES 14.5.10 g	Construction	Protection of flood defences from ground movement	Controls to reduce ground movement	REAC RDWE007
RDWE16	ES 14.5.10 h	Construction	Protection of watercourses during utility works	Trenchless techniques to cross water courses.	REAC RDWE007
RDWE17	ES 14.5.10 i	Construction	Protection of groundwater resource from utilities works	Controls to prevent draining of groundwater	REAC RDWE051 and RDWE058
RDWE18	ES 14.5.10 j-k	Construction	Riverbank protection and reinstatement	Bank protection during works and reinstatement of vegetation	REAC RDWE009 and RDWE010
RDWE19	ES 14.5.10 l, m and p	Construction	Spill protection	Measures for safe storage of chemical, waste oils or fuels and refuelling activities. Implementation of incident controls and spillage protocols.	CoCP Section 6.10 REAC GS004 and GS005
RDWE20	ES 14.5.10 n	Construction	Prevent contamination of controlled rivers	Ground investigation to reduce risk of creating pollutant pathways. Incident controls to reduce the risk of contamination entering controlled waters.	REAC GS001 and GS019

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
RDWE21	ES 14.5.10 o	Construction	To avoid construction site runoff affecting the performance of operational drainage features	Install pollution control measures before bringing retention ponds or infiltration facilities into service for construction and/or operation.	REAC RDWE043
RDWE22	ES 14.5.10 p	Construction	To protect potable groundwater sources	No fuel storage or fuel filling within a published or bespoke (in agreement with the EA) Source Protection Zone 1 (SPZ1) or within the 50m default source protection zone radius of a private water supply well or spring.	REAC GS004 and GS005
RDWE23	ES 14.5.14 a	Construction	To mitigate impacts on the groundwater regime as a result of abstraction	Water supplied to the tunnel boring machinery may be groundwater abstracted from a Northumbrian Water borehole at Linford. If this is the case, then extraction rates would be agreed with Northumbrian Water prior to commencement of main tunnelling works and would not be exceeded.	REAC RDWE003
RDWE24	ES 14.5.14 b-d and l	Construction	To mitigate impacts on groundwater quality and quantity as a result of tunnelling	Technical solutions would be developed following further investigation and assessment.	RDWE018a RDWE018b
RDWE25	ES 14.5.14 e	Construction	To mitigate impacts on groundwater quality and quantity as a result of tunnelling	Potential to reduce the footprint of the structure by optimising the tunnel bore spacing and layout of the tunnel boring machinery launch structure.	REAC GS021
RDWE26	ES 14.5.14 f	Construction	To maintain irrigation system at Low Street	Prior to works for the construction of the viaduct crossing that may impact this well and reservoir, this water supply system would be reconfigured, as agreed with the landowner, to maintain continuity of supply.	REAC RDWE015
RDWE27	ES 14.5.14 g	Construction	To maintain irrigation system in North Ockendon, if required by the landowner	An existing ditch network in North Ockendon would be disconnected by the alignment of the Project road. A new supply route across the	REAC RDWE016

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
				Project road would be provided unless otherwise agreed with the landowner.	
RDWE28	ES 14.5.14 h	Construction	To limit disturbance to wildlife	Ground stabilisation could be done using suitable methods that would be agreed with the Applicant and that would avoid the need for surface excavations/ penetrations in areas designated for protection of wildlife.	REAC RDWE017
RDWE29	ES 14.5.14 i	Construction	To control groundwater pumping and ingress associated with the ground protection tunnel and shafts	Construction methods would control groundwater pumping and ingress.	REAC RDWE018a
RDWE30	ES 14.5.14 j	Construction	To ensure the ground protection tunnel and shafts are completely filled when decommissioned	The ground protection tunnel and shafts would be completely backfilled with suitable materials. No temporary works would be left in the upper 2m of ground and shaft sites would be returned to their current land use.	REAC RDWE018b
RDWE31	ES 14.5.14 k	Construction	To safeguard potable water supply	Chemicals and materials, such as cement, grout and lubricants used during construction activities in proximity to any groundwater SPZ would be stored, transported and used in a suitable manner to safeguard potable water supply.	REAC RDWE019
RDWE32	ES 14.5.14 m, t and u	Construction	To encourage continued fish passage in West Tilbury Main culvert	Bankside vegetation reinstatement and planting at the entrance to the West Tilbury Main culvert would be designed to ensure no sharp light/dark interface, by planting with a scrub mix that would include alder with root barriers used as necessary. A fish pass would be provided, designed for eels and elvers. The culvert would be partially submerged at the	REAC RDWE021, RDWE030 and RDWE031

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
				downstream end and a resting pool for coarse fish would be provided just downstream.	
RDWE33	ES 14.5.14 n	Construction	To maintain water quality in the western ditch	Water discharged into the western ditch from the southern tunnel entrance compound would be treated to the standard specified within the discharge consent granted by the EA and released at greenfield runoff rates.	REAC RDWE033
RDWE34	ES 14.5.14 o	Construction	To offset any loss of flood storage	Compensatory flood storage areas would be formed	REAC RDWE037
RDWE35	ES 14.5.14 p	Construction	To manage flood risk in the northern tunnel entrance compound, Station Road compound, southern tunnel entrance compound and Milton compound	Compound layouts to be in accordance with site-specific FRAs	REAC RDWE022
RDWE36	ES 14.5.14 q	Construction	To mitigate impacts on water quality and hydrodynamics in the River Thames	The discharge arrangement described in RDWE028 would be constructed and operational in advance of the excavation of the North Portal and tunnelling works and would be used for the discharge of treated construction phase effluents. All effluents would receive treatment prior to discharge into the River Thames to ensure compliance the Environmental Permitting (England and Wales) Regulations 2016.	REAC RDWE028 and RDWE023
RDWE37	ES 14.5.14 r	Construction	To manage potential effects associated with marine structures	Work in accordance with the Deemed Marine Licence	REAC RDWE024
RDWE38	ES 14.5.14 s	Construction	To reduce disturbance to the intertidal zone	The design of the discharge pipeline and outfall to the Thames would provide for a subtidal, mid-water discharge for effective	REAC RDWE028

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
				dilution and dispersal. The design would be in accordance with the Deemed Marine Licence.	
RDWE39	ES 14.5.14 v	Construction	To reduce groundwater drawdown beyond the M25 cutting	Measures would be confirmed in consultation with the EA and London Borough of Havering and, if confirmed to be necessary, the detail of such measures would be agreed by the Secretary of State.	REAC RDWE038
RDWE40	ES 14.5.14 w	Construction	To avoid the need for works in the River Thames to provide tunnel scour protection	The main tunnels would be at sufficient depth to avoid the need for any works to provide tunnel scour protection.	REAC RDWE041
RDWE41	ES 14.5.14 x	Construction	To manage any potential impact on the South Thames Estuary and Marshes Site of Special Scientific Interest (SSSI) and Thames Estuary and Marshes Ramsar	Any pumped water removal associated with utility diversion work number MU26 would be subject to approval from the EA and would comply with EA Permitting Regulations.	REAC RDWE053
RDWE42	ES 14.5.14 y	Construction	To protect the Linford groundwater source	Should the crossing of Gobions Sewer for works number MUT6 be below ground, it would be conducted in consultation with Northumbrian Water and the EA.	REAC RDWE058
RDWE43	ES 14.5.11 a	Operation	To reduce the potential for scour and associated hydromorphological change	Highway drainage outfall headwall arrangements would be set back from the banks of the receiving watercourses and outfall designs would accord with DMRB standards.	REAC RDWE011
RDWE44	ES 14.5.11 b	Operation	To safeguard water quality	Drainage infrastructure and treatment systems would be maintained in accordance with DMRB Asset Inspection and Asset Maintenance requirements.	REAC RDWE012

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
RDWE45	ES 14.5.11 c	Operation	To maintain land drainage regimes and to convey flood flows	New culverts would be sized appropriately.	REAC RDWE013
RDWE46	ES 14.5.11 d	Operation	To ensure that culverts are inspected and maintained	Culverts would be inspected and maintained in accordance with DMRB Asset Inspection and Asset Maintenance requirements, with any additional requirements documented in the Maintenance and Repair Statement.	REAC RDWE014
RDWE47	ES 14.5.15 a	Operation	To ensure continued functionality of the West Tilbury Main	Existing blockage to be cleared	REAC RDWE047
RDWE48	ES 14.5.15 b	Operation	To offset the loss of an overland flow path across East Tilbury marshes	Removal of three culverts and construction of one large replacement culvert. Construction of a flow control structure in West Tilbury Main	REAC RDWE046
RDWE49	ES 14.5.15 c	Operation	To prevent contamination of receiving watercourses	Tunnel drainage system to include provision to capture and isolate contaminated waters, and discharges would be restricted to high tide	REAC RDWE026
RDWE50	ES 14.5.15 d	Operation	To protect water quality	Infiltration basins to provide treatment as stated.	REAC RDWE034
RDWE51	ES 14.5.15 e	Operation	To protect potable water	Attenuation and treatment pond at Chadwell St Mary to be lined	REAC RDWE032
RDWE52	ES 14.5.15 f and g	Operation	To manage flood risk	Retention ponds to be designed with appropriate capacity	REAC RDWE035 and RDWE048
RDWE53	ES 14.5.15 h	Operation	To reduce infiltration into tunnel bores and cross passages	Measures including gaskets and membranes would be used	REAC RDWE027
RDWE54	ES 14.5.15 i	Operation	To protect the tunnel from flooding	Flood protection to be provided around the North Portal	REAC RDWE029

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
RDWE55	ES 14.5.15 j and k	Operation	To manage flood flows in the Mardyke floodplain	Drainage channel to be provided to manage intercepted floodplain flows. A raised bund would be provided to prevent the formation of a new flow path from Golden Bridge Sewer to the Mardyke in Orsett Fen	REAC RDWE040 and RDWE039
RDWE56	ES 14.5.15 l	Operation	To manage water levels to facilitate operation of wetland areas	Water level control structures to be provided	REAC RDWE050
RDWE57	ES 14.5.15 m	Operation	To prevent draining of perched groundwater in areas affected by Work No. G1b	Should perched groundwater be encountered then shafts will be sealed after construction.	REAC RDWE051
RDWE58	ES 14.5.15 n	Operation	To manage the risk of utility trenches acting as a permanent drain from New Fish Pond	If New Fish Pond is confirmed to be unlined, the relevant utility works shall be constructed to reduce the potential draining effects from the pond area	REAC RDWE052
RDWE59	ES 14.5.15 o (and duplicated in ES 14.5.15 t)	Operation	To manage the risk of utility works leading to drainage from or reduced flows into Low Street irrigation reservoir	The spatial arrangement of the utility corridors and the below-ground materials shall be designed to prevent drainage from or reduced flows to the reservoir	REAC RDWE054
RDWE60	ES 14.5.15 p	Operation	To reduce barrier effects to groundwater flow near to Hoford Road	The design of utility corridors in this area shall consider the depth to formation level and below-ground materials to reduce barrier effects to groundwater flow.	REAC RDWE055
RDWE61	ES 14.5.15 q and r	Operation	To limit impacts on groundwater flows in the area of the M25	Any groundwater removal during the works shall be subject to Environmental Permitting Regulations	REAC RDWE056 and RDWE057
RDWE62	ES 14.5.15 s	Operation	To manage water levels in the Coalhouse Point HRA mitigation area	A new structure may be constructed in the existing tidal flood defence. The structure would be self-regulating.	REAC RDWE049

Table 3.13 Terrestrial Biodiversity

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
TB1	ES 8.5.6	Design development	Connecting suitable habitats throughout the wider landscape	Biodiverse wildlife corridor	Environmental Masterplan Design Principle PLA.05
TB2	ES 8.5.7	Design development	Allow free movement of species beneath the bridge and mitigating potential fragmentation effects, and accommodate farm vehicles as well as allowing for free passage	Construction of viaduct	Design Principles PLA.05, STR.08, STR.01, STR.04, STR.06, S12.03, S12.04 and S12.05
TB3	ES 8.5.8 a-e	Design development	Maintaining connectivity for biodiversity	Construction of mixed-use green bridge	Environmental Masterplan Design Principles PLA.05, STR.01, STR.06, STR.08, S1.04, S1.14, S2.04, S10.03, S11.11, S10.01 and S12.13
TB4	ES 8.5.9	Design development	Reduce shading and cause the least amount of long-term habitat degradation	Design of viaduct	Design Principles PRO.04, PLA.05, STR.01, STR.04, STR.06, S12.03, S12.04, S12.05 and LSP.05
TB5	ES 8.5.10 ES 8.5.11 a-d	Design development	Designed to allow mammal passage	Provision of mammal ledges / dedicated passage	Environmental Masterplan Design Principles PRO.04, PLA.05, STR.01, LSP.01, LSP.02, LSP 0.5 and S9.10
TB6	ES 8.5.12	Design development	Direct animals to specific crossing locations to reduce risk of mortality for animals trying to cross the Project	Permanent fencing would be erected, and vegetation planted in appropriate areas	Design Principles STR.01, STR.09 and PRO.04
TB7	ES 8.5.13	Design development	Reduce the risk of any Great Crested Newts (GCN) fatalities	Gully pots would only be included in the drainage design of the Project where no suitable alternative existed to achieve the relevant drainage objective	Design Principle LSP.28

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
TB8	ES 8.5.14	Design development	Reduce the risk of mortality of low-flying species (particularly bats)	Creation of cuttings or false cuttings for large sections of the route	Environmental Masterplan Design Principles PRO.04, PLA.05, LSP.09, LSP.20 and LSP.21
TB9	ES 8.5.15	Design development	Reduce impacts on important biodiversity features	Minimised lighting	Design Principles LST.02 and LST.03
TB10	ES 8.5.16	Design development	Increase amount of high-quality wildlife-rich habitat, and position new habitat to forge strong links between areas of retained semi-natural habitat within the network of designated sites across the wider landscape due to increased nitrogen deposition on designated sites with 200m of the ARN	Landscape scale habitat creation	REAC TB025 Environmental Masterplan Design Principle LSP.27 oLEMP
TB11	ES 8.5.17	Construction	To ensure robust baselines are available to support the detailed design of protected species mitigation strategies and avoid the spread of Invasive Non-Native Species	Pre-construction surveys would be undertaken	Schedule 2 Requirement 7 of the Draft DCO REAC TB005
TB12	ES 8.5.18	Construction	To avoid adverse effects on sensitive ecological receptors from construction lighting	Construction site lighting controls	REAC TB024
TB13	ES 8.5.19	Construction	Control runoff to surface water and the risk of pollution of local watercourses	Construction water management	CoCP, Section 6.10 REAC RDWE006
TB14	ES 8.5.20	Construction	Dust deposition	Dust suppression measures	REAC AQ002, AQ003, AQ005 and AQ005
TB15	ES 8.5.21	Construction	Demarcate important and protected habitats, preventing construction	Temporary fencing	Environmental Masterplan REAC TB002 and TB006

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
			access to protect them from accidental damage		
TB16	ES 8.5.22	Construction	Maintaining integrity of important habitats adjacent to works	Works compounds, access tracks, haulage routes, material storage areas, generators and other construction activities would not be located within areas of retained vegetation unless the SoS agrees that any variation does not result in new or materially different significant environmental effects to those reported in the ES	Environmental Masterplan REAC TB003
TB17	ES 8.5.23	Construction	Works near watercourses	Temporary drainage design, construction water management, protection of watercourses during utility works, drainage arrangements / drainage discharge design, water discharge management, construction drainage management, pre-construction surveys, management of chemical, waste oils or fuel storage and refuelling activities, management of plant refuelling and treatment of groundwater from dewatering works on standards agreed with the EA before discharge (if dewatering is required).	REAC RDWE002, RDWE006, RDWE008, RDWE023, RDWE028, RDWE033, RDWE043, GS002, GS004, GS005 and GS022
TB18	ES 8.5.24	Construction	To avoid disturbance and incidental mortality of breeding birds. To avoid harming birds of their nests	Timing vegetation clearance and structure removal outside bird nesting season (March to August inclusive), and temporary fencing around nesting sites immediately adjacent to construction works where this is not practicable	REAC TB004
TB19	ES 8.5.25	Construction	To avoid disturbance to passage and overwintering birds associated with European designated sites	Work undertaken during April, May, June, July and August only, unless otherwise agreed with SoS in consultation with Natural England	REAC HR002

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
TB20	ES 8.5.26	Construction	Prevent spread of invasive species	Invasive species would be identified prior to construction and would be removed or treated	REAC TB005
TB21	ES 8.5.27	Construction	Encourage mobiles species to move from the construction site into the wider landscape	Displacement of protected / notable species	REAC TB013 Natural England licences
TB22	ES 8.5.28 a-f	Operation	To improve priority habitats and species	Habitat management	REAC TB007
TB23	ES 8.5.30	Construction	Loss of hedgerow habitat	Creation of new hedgerows and maintaining and improving hedgerows in the vicinity of the proposed green bridges	REAC TB001 Design Principles PLA.05, LSP.02, LSP.13 and STR.08
TB24	ES 8.5.31 ES 8.5.32 a-b	Construction	Compensatory woodland planting	Objectives and success measures for woodland planting	REAC TB028
TB25	ES 8.5.33	Construction	Offset the loss of ancient woodland and soil disturbance	Compensatory ancient woodland planting and soil translocation	Environmental Masterplan REAC TB028
TB26	ES 8.5.34	Construction	Woodland planting	Design of landscape planting and habitat provision to meet site specific objectives	Environmental Masterplan Design Principles LSP.15, LSP.19, S1.08, S1.14 and S2.01
TB27	ES 8.5.35 a-k	Construction	Habitat creation	Objectives and success measures for habitat creation	Environmental Masterplan Design Principle LSP.22
TB28	ES 8.5.36 ES 8.5.37 ES 8.5.38 ES 8.5.39 ES 8.5.40	Construction	To support the range of terrestrial invertebrates and reptiles, as well as being suitable for a number of species. To support the Project becoming a wildlife corridor. To compensate predicted habitat losses	Habitat creation (Locally specific design objectives)	Environmental Masterplan Design Principles PRO.04, PLA.05, LSP.02, LSP.04, LSP.09, S9.13, LSP.11 and LSP.22

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
			To maximise the suitability of the habitats for terrestrial invertebrates		
TB29	ES 8.5.41	Construction	Loss / removal of ponds due to construction	Replacement of ponds	Design Principle LSP.31
TB30	ES 8.5.42	Construction	To ensure greater floral diversity to benefit a wider range of species than the existing watercourses	Watercourse diversion planting	Environmental Masterplan Design Principles LSP.02, LSP.04, LSP.12, PRO.04 and S12.06 REAC TB021
TB31	ES 8.5.43 ES 8.5.44	Construction	Protection of badgers	Provision of artificial badger setts	REAC TB008
TB32	ES 8.5.45	Construction and Operation	Bat roosts lost or heavily disturbed	Roosts to be removed under licence and alternative roosting structures would be provided	Environmental Masterplan REAC TB009 and TB027
TB33	ES 8.5.46	Construction	Reduce potential adverse effects on water voles	Footings sited to avoid existing wetland habitat. Water vole translocation to receptor site	REAC TB023 and TB016
TB34	ES 8.5.47	Construction	Direct loss of barn owl breeding sites	Alternative breeding sites (nest boxes) would be provided	REAC TB010
TB35	ES 8.5.48	Construction	Disturbance to barn owls during the breeding season	Screening by acoustic fencing	REAC TB011
TB36	ES 8.5.49	Construction	To supplement the habitat creation by compensating the loss of nesting opportunities whilst newly created habitats establish	Bird nest boxes would be provided within areas of retained woodland and trees	Environmental Masterplan REAC TB012
TB37	ES 8.5.50	Construction	Translocation of protected species	Translocation of protected species away from the construction site and to establish receptor sites with sufficient carrying capacity prior to habitat clearance occurring	REAC TB016 Natural England licences

Ref	Source	Phase of Project	Purpose of control / environmental feature	Mitigation	Control
TB38	ES 8.5.51	Construction	Protected species	Natural England licence and associated working practices and method statements in place prior to construction	REAC TB014 Natural England licences
TB39	ES 8.5.52	Construction	Site clearance and landscaping	Protected species mitigation licence. Translocation of non-licensable species and establish receptor sites with sufficient carrying capacity and established habitat	REAC TB018 and TB026
TB40	ES 8.5.53	Construction	Protected / notable species	Translocation of habitat features of value to protected / notable species	REAC TB018
TB41	ES 8.5.54 ES 8.5.57	Construction and Operation	Monitoring of protected species and operation phase surveys	Monitoring and surveys in accordance with protected species licences	REAC TB015 Natural England licences
TB42	ES 8.5.55	Construction	Trees being felled or pruned	Translocation of important lichen	Environmental Masterplan REAC TB020
TB43	ES 8.5.56	Construction	Acid grassland habitat	Translocation of acid grassland	Environmental Masterplan REAC TB019
TB44	ES 8.5.58	Operation	Reduce effect of air quality changes (increased nitrogen deposition), on designated habitats	Speed enforcement, compensatory planting of semi-natural habitat designed to provide large areas of wildlife-rich habitats that create new links and build resilience into the network of designated habitats	REAC TB025 Environmental Masterplan
TB45	ES 8.5.59	Construction	To create additional slow-flowing ditch, pond and grassland with scrub habitats for use by species such as water vole and GCN, as well as to provide suitable bird foraging and nesting habitat	Land to be reinstated for habitat enhancement	Environmental Masterplan REAC TB022
TB46	ES 8.5.60 ES 8.5.61 ES 8.5.62	Construction and Operation	Water vole	Water vole translocation and localised mink eradication	Side agreement between the Applicant and Essex Wildlife Trust.

References

British Standards Institution (2016). PAS 2080 Carbon Management in Infrastructure. Accessed September 2023. https://www.bsigroup.com/en-GB/our-services/product-certification/product-certification-schemes/pas-2080-carbon-management-in-infrastructure-verification/

Standards for Highways (2020). Design Manual for Roads and Bridges CD 146 - Positioning of Signalling and Advance Direction Signs. Accessed September 2023. https://www.standardsforhighways.co.uk/search/ab8e07d2-6785-4a87-8a0e-e6e100fab426

Standards for Highways (2022). Design Manual for Roads and Bridges CD 354 – Design of minor structures. Accessed September 2023. https://www.standardsforhighways.co.uk/search/d3263218-52b9-48ae-b5a9-2250f17ed613

Standards for Highways (2020). Design Manual for Roads and Bridges GM 701 - Asset delivery asset maintenance requirements. Accessed September 2023. https://www.standardsforhighways.co.uk/search/e0a134c8-f5e2-4f30-9cda-9e43d047f46e

Standards for Highways (2020). Design Manual for Roads and Bridges GS 801 - Asset delivery asset inspection requirements. Accessed September 2023. https://www.standardsforhighways.co.uk/search/6b558352-5c85-4725-b5f2-f796f53d63a8

Glossary

Term	Abbreviation	Explanation
Archaeological Mitigation Strategy and Outline Written Scheme of Investigation	**AMS-OWSI**	The AMS-OWSI sets out mitigation for heritage assets.
Area of Outstanding Natural Beauty	**AONB**	Statutory designation intended to conserve and enhance the ecology, natural heritage and landscape value of an area of countryside.
Code of Construction Practice	**CoCP**	The CoCP sets out a framework for the mitigation and management of environmental effects during construction and operation.
Consents and Agreements Position Statement	**CAPS**	The CAPS sets out the intended strategy for obtaining consents and associated agreements needed to implement the Project.
Considerate Constructors Scheme	**CCS**	A not-for-profit, independent organisation founded in 1997 to raise standards in the construction industry.
Design Manual for Roads and Bridges	**DMRB**	A comprehensive manual which contains requirements, advice and other published documents relating to works on motorway and all-purpose trunk roads for which one of the Overseeing Organisations (National Highways, Transport Scotland, The Welsh Government or the Department for Regional Development (Northern Ireland)) is highway authority. The DMRB has been developed as a series of documents published by the Overseeing Organisations of England, Scotland, Wales and Northern Ireland. For the Lower Thames Crossing the Overseeing Organisation is National Highways.
Development Consent Order	**DCO**	Means of obtaining permission for developments categorised as Nationally Significant Infrastructure Projects under the Planning Act 2008.
Environment Agency	**EA**	A non-departmental public body of Defra, established under the Environment Act 1995. It is the leading public body for protecting and improving the environment in England and Wales. The organisation is responsible for wide-ranging matters, including the management of all forms of flood risk, water resources, water quality, waste regulation, pollution control, inland fisheries, recreation, conservation and navigation of inland waterways.
Environmental Impact Assessment	**EIA**	A process by which information about environmental effects of a proposed development is collected, assessed and used to inform decision making. For certain projects, EIA is a statutory requirement, reported in an ES.
Environmental Statement	**ES**	A document produced to support an application for development consent that is subject to EIA, which sets out the likely impacts on the environment arising from the proposed development.
Examining Authority	**ExA**	The ExA is appointed by the SoS to examine an application for a DCO and make a recommendation.
Flood Risk Assessment	**FRA**	An assessment of the risk of flooding from all flooding mechanisms, the identification of flood mitigation measures, and identification of actions to be taken before and during a flood.

Term	Abbreviation	Explanation
Framework Construction Travel Plan	**FCTP**	The FCTP sets out a framework to reduce the impact of the Project's construction workforce on the road network as a result of travel to and from construction worksites, compounds and Utility Logistics Hubs (ULH).
Great Crested Newt	**GCN**	GCNs are a European protected species. The animals and their eggs, breeding sites and resting places are protected by law.
Greenhouse Gas	**GHG**	Gases able to absorb infrared radiation emitted from Earth's surface and reradiate it back to Earth's surface, thus contributing to the greenhouse effect. Carbon dioxide, methane, and water vapour are the most important GHGs.
Habitats Regulations Assessment	**HRA**	A tool developed by the European Commission to help competent authorities (as defined in the Habitats Regulations) to carry out assessment to ensure that a project, plan or policy will not have an adverse effect on the integrity of any Natura 2000 or European sites (Special Areas of Conservation, Special Protection Areas and Ramsar sites), either in isolation or in combination with other plans and projects, and to begin to identify appropriate mitigation strategies where such effects were identified.
Landscape and Ecology Management Plan	**LEMP**	A document which provides details on the delivery and management of the landscape and ecology elements identified in the Environmental Masterplan for the Project, including their success criteria.
Low Noise Surface	**LNS**	A low noise surface is used on a road to reduce the traffic noise induced by the interaction between road surface and vehicle tyres.
Marine Management Organisation	**MMO**	An executive non-departmental public body in the UK established under the Marine and Coastal Access Act 2009. The MMO exists to make a significant contribution to sustainable development in the marine area, and to promote the UK Government's vision for clean, healthy, safe, productive and biologically diverse oceans and seas.
Outline Landscape and Ecology Management Plan	**oLEMP**	The oLEMP sets out the proposed management of the landscape and ecological elements of the Project.
Outline Materials Handling Plan	**oMHP**	The oMHP sets out the approach and high-level principles for handling construction materials and waste, both inside and outside the order limits.
Outline Site Waste Management Plan	**oSWMP**	The oSWMP sets out the overarching principles and procedures that would be applied for the management of waste during the construction of the Project.
Outline Traffic Management Plan	**oTMPfC**	The oTMPfC sets out the approach to carrying out temporary traffic management for the safe construction of the Project.
PAS 2080	**-**	PAS 2080 is a standard for managing carbon in building and infrastructure.
Preliminary Navigational Risk Assessment	**pNRA**	The pNRA assesses and quantifies the navigation risk posed by the Project during construction and operation.
Public Rights of Way	**PRoW**	A right possessed by the public to pass along routes over land at all times. Although the land may be owned by a private individual, the public may still gain access across that land along a specific route. The mode of transport allowed differs according to the type of PRoW, which can consist of footpaths, bridleways and open and restricted byways.

Term	Abbreviation	Explanation
Second Iteration of the Environmental Management Plan	**EMP2**	Second iteration of the Environmental Management Plan as defined by the DMRB LA 120.
Secretary of State	**SoS**	The Secretary of State has overall responsibility for the policies of the Department for Transport.
Site of Special Scientific Interest	**SSSI**	A conservation designation denoting an area of particular ecological or geological importance.
Site Specific Travel Plans	**SSTPs**	These are travel plans for individual or closely located compounds or ULH, developed under the FTCP.
Source Protection Zone	**SPZ**	EA defined groundwater sources such as wells, boreholes and springs used for public drinking water supply. These zones show the risk of contamination from any activities that might cause pollution in the area.
Special Protection Areas	**SPA**	A designation under EU Directive 2009/147/EC on the Conservation of Wild Birds.
Stakeholder Actions and Commitments Register	**SACR**	The SACR provides a list of construction and/or design and/or operational related commitments given to stakeholders that are secured within the DCO and are not included in other documents or agreements such as side agreements; environmental mitigation, as secured in the REAC; or measures required within the outline management plans.
Register of Environmental Actions and Commitments	**REAC**	The REAC identifies the environmental commitments that would be implemented during the construction and operational phases of the Project if the DCO is granted, and forms part of the CoCP.
Traffic Management Plan	**TMP**	A plan setting out the strategy and measures to be adopted with respect to highway and transportation issues for the Project. The TMP supports the DCO application and would be embedded within the eventual construction contractor documentation and will form an overarching and comprehensive management procedure for the Contractor to adhere to.
Unexploded Ordnance	**UXO**	Explosive ammunition that did not explode when they were deployed and still pose a risk of detonation.
Utility Logistics Hubs	**ULH**	Temporary compounds required for specific utility works. They would receive, store and distribute the plant machinery and materials for specific utility works. They may include offices, welfare facilities, refuelling stations, security hubs, vehicle/wheel washing sites and parking areas similar in size to the main works satellite compounds.
Walkers, Cyclists and Horse Riders	**WCH**	-
Wider Network Impacts Management and Monitoring Plan	**WNIMMP**	The WNIMMP sets out a traffic impact monitoring scheme to identify changes in performance on the surrounding road network.
Written Schemes of Investigation	**WSI**	A WSI sets out the scope, guiding principles and methods for the planning and implementation of archaeological assessment.

If you need help accessing this or any other National Highways information, please call **0300 123 5000** and we will help you.

If you have any enquiries about this publication email **info@nationalhighways.co.uk** or call **0300 123 5000***.

*Calls to 03 numbers cost no more than a national rate call to an 01 or 02 number and must count towards any inclusive minutes in the same way as 01 and 02 calls.

These rules apply to calls from any type of line including mobile, BT, other fixed line or payphone. Calls may be recorded or monitored.

Printed on paper from well-managed forests and other controlled sources when issued directly by National Highways.

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

National Highways Limited registered in England and Wales number 09346363