

Lower Thames Crossing

9.89 Responses to the Examining Authority's ExQ1 Appendix D – 6, 7, 8

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Appendix D – 6, 7, 8

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1 Introduction

1.1 Introduction

1.1.1 This document has been prepared by the Applicant to set out its responses to the Examining Authority's (ExA's) first round of written questions [[PD-029](#)]

1.1.2 These can be found in Tables set out under the following headings:

- a. Climate Change and carbon emissions (found in Appendix A)
- b. Consideration of alternatives (Found in Appendix A)
- c. Traffic and transportation (Found in Appendix B)
- d. Air quality (Found in Appendix C)
- e. Geology and soils (Found in Appendix D)
- f. Waste and materials (Found in Appendix D)
- g. Noise and vibration (Found in Appendix E)
- h. Road Drainage, water environment and flooding (Found in Appendix F)
- i. Biodiversity (Found in Appendix G)
- j. Physical effects of development and operation (Found in Appendix H)
- k. Social, economic and land-use considerations (Found in Appendix I)
- l. Draft Development Consent Order, planning obligations, agreements and adequacy of security (Found in Appendix J)
- m. The acquisition and temporary possession of land and rights (Found in Appendix J)
- n. General overarching questions (Found in Appendix J)

2 Responses to the Examining Authority's ExQ1 6

PINS ID	External Stakeholder (where applicable)	Question / Response
ExQ1_Q6.1.1	N/A	<p>Contaminated Land and Unexploded Ordnance (UXO)</p> <p>There are concerns, particularly with the land north of the Thames, relating to the spread of contamination as identified in Appendix 10.6 – Preliminary Risk Assessment Report [APP-427]. - Can the Applicant set out the pre-commencement processes and where these are secured to provide assurance that all potential risks are found before damage occurs particularly in the areas where there have been highlighted data gaps? - Can the Applicant describe the remedial measures expected to be undertaken, when these are to be undertaken, how these will be reviewed for effectiveness and where these are secured? - How has the Applicant assessed the potential for any release of contaminants to have an effect on mitigation or habitat creation as a result of the Proposed Development?</p> <p>Response:</p> <p><i>There are concerns, particularly with the land north of the River Thames, relating to the spread of contamination as identified in Environmental Statement (ES) Appendix 10.6: Preliminary Risk Assessment Report [APP-427].</i></p> <p><i>'Can the Applicant set out the pre-commencement processes and where these are secured to provide assurance that all potential risks are found before damage occurs particularly in the areas where there have been highlighted data gaps?'</i></p> <p>The Applicant has carried out an assessment of the impacts of the Project during construction and operation on geology and soils in the study area. ES Chapter 10: Geology and Soils [APP-148] presents the assessment of the likely significant effects on geology and soil, including the potential impacts of contaminated land on human health and controlled water receptors. The assessment methodology for land contamination is presented in paragraphs 10.3.65 to 10.3.67 and Tables 10.2 and 10.3 of the chapter and has been carried out in line with current best practice as presented in the Land</p>

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		<p>Contamination Risk Management (LCRM) guidance¹ and the methodology standard provided in Design Manual for Roads and Bridges LA 109 Geology and Soils².</p> <p>In line with this best practice, ES Appendix 10.6: Preliminary Risk Assessment Report [APP-427] presents the Project Conceptual Site Model (CSM). This has been refined by subsequent tiers of risk assessment as reported in Annex A to Annex D of ES Appendix 10.9: Generic Quantitative Risk Assessment [APP-430, APP-431 and APP-432].</p> <p>All identified credible contaminant sources have been assessed to establish whether there is a credible pollutant linkage and risk ratings determined for them (low, medium and high). This has led to the revision of the Conceptual Site Model and the identification of residual risks as presented in [APP-430, APP-431 and APP-432], as set out below. Where they exist, uncertainties are discussed in Section 6 (Refined Conceptual Site Model), and Section 7 (Limitation analysis) in respect of relevant sources of contamination in each of Annex A to Annex D [APP-430, APP-431 and APP-432].</p> <ul style="list-style-type: none"> • GQRA Report for Package A, Section 8 (Refinement of CSM) and Annex A-A Generic Quantitative Risk Assessment (ES Appendix 10.9: Generic Quantitative Risk Assessment Report for the Phase 2 Investigation (1 of 3) [APP-430]) • GQRA Report for Package B, Section 8 (Refinement of CSM) and Annex B-A Generic Quantitative Risk Assessment (ES Appendix 10.9: Generic Quantitative Risk Assessment Report for the Phase 2 Investigation (2 of 3) [APP-431]) • GQRA Report for Package C, Section 8 (Refinement of CSM) and Annex C-H Generic Quantitative Risk Assessment (ES Appendix 10.9: Generic Quantitative Risk Assessment Report for the Phase 2 Investigation (3 of 3) [APP-432]) • GQRA Report for Package D, Section 8 (Refinement of CSM) and Annex D-A Generic Quantitative Risk Assessment (ES Appendix 10.9: Generic Quantitative Risk Assessment Report for the Phase 2 Investigation (3 of 3) [APP-432])

¹ Environment Agency (2023). Land contamination risk management (LCRM). <https://www.gov.uk/government/publications/land-contamination-risk-management-lcrm>

² Highways England (2019). Design Manual for Roads and Bridges, LA 109 Geology and Soils. <https://www.standardsforhighways.co.uk/search/adca4c7d-4037-4907-b633-76eaed30b9c0>

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		<p>In total, the GQRA identifies 15 medium-risk sites, one high-risk site and the remaining credible sources being assessed as low risk (ES Chapter 10: Geology and Soils [APP-148] paragraph 10.4.156 and Table 10.19). The medium and high-risk sites are taken forward to ES Appendix 10.11: Remediation Options Appraisal and Outline Remediation Strategy [REP1-165].</p> <p>The identified risks to human health and controlled waters from pre-existing contamination as assessed in the GQRA can be avoided or mitigated by the measures secured through Project commitments set out in ES Appendix 2.2: Code of Construction Practice (CoCP) [REP1-157], which includes the Register of Environmental Actions and Commitments (REAC) and the remediation methodologies described in the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165].</p> <p>Prior to construction, further ground investigations to inform the detailed design of the Project and where supplementary investigation is required to assess residual contamination risks, including identified data gaps, will be undertaken by the Contractor as described in Section 10.5 of ES Chapter 10: Geology and Soils [APP-148] and Appendix 10.11: Remediation Options Appraisal and Outline Remediation Strategy [REP1-165]. This commitment is set out in the REAC (GS001, GS027 (if required) and GS028).</p> <p>ES Chapter 10 paragraph 10.5.8a states: <i>'Supplementary ground investigations would be undertaken to assess residual contamination risks as detailed in the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165]. If, during further intrusive ground investigations, drilling is required in areas underlain with contaminated soils, drilling and excavation techniques in line with the latest versions of BS 5930:2015 Code of practice for ground investigations (British Standards Institution, 2020) and BS 10175:2011 Investigation of potentially contaminated sites – Code of Practice (British Standards Institution, 2017) would be adopted (for example, environmental seals) to reduce the risk of creating pollutant pathways. The Contractors would provide ground investigation method statements for acceptance of National Highways in consultation with the Environment Agency and relevant Local Authorities prior to commencement of the works (REAC Ref. GS001).'</i></p> <p>ES Chapter 10 paragraph 10.5.8t states: <i>'Where supplementary investigation is undertaken to assess residual contamination risks in accordance with GS001, appropriate assessment in accordance with LCRM (Environment Agency, 2021) would be undertaken, and where unacceptable risks are identified, the Contractors would 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 [REP1-165], which identifies techniques that could be implemented by the Contractors for the remediation of contamination (REAC Ref. GS027).'</i></p>

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		<p>ES Chapter 10 paragraph 10.5.8f states: ‘All excavated materials and soils proposed for re-use under a Materials Management Plan would be required to meet risk-based acceptability criteria applicable to its intended use. The procedures and criteria to be used would be set out in the Materials Management Plan (REAC Ref. MW007) prior to commencement of that part of the works (REAC Ref. GS006).’</p> <p>ES Chapter 10 paragraph 10.5.8s states: ‘Construction of foundations (including piling and ground improvement works) has the potential to create pollution pathways and mobilise contaminants. The Contractors would prepare a detailed foundation risk assessment report in line with the ES Appendix 10.11 [REP1-165], during detailed design specific to structures and ground conditions. This would be submitted to the Environment Agency for review prior to commencement of that part of the works to which the report relates. (REAC Ref. GS026).’</p> <p>The REAC commitments referred to above identified in the CoCP [REP1-157] are legally secured by requirement 4 of the draft DCO [REP2-004].</p> <p>‘Can the Applicant describe the remedial measures expected to be undertaken, when these are to be undertaken, how these will be reviewed for effectiveness and where these are secured?’</p> <p>The Remediation Options Appraisal and Outline Remediation Strategy [REP1-165] sets out remediation options to address known land quality and contamination concerns and demonstrates that suitable remediation techniques are available to treat the potential contamination present, where required. This work would be undertaken by the Contractor during the construction phase and prior to operation. Remediation works are secured as an item listed as an ancillary work activity in the draft DCO [REP1-042] through Schedule 2, Part 1, Requirement 4(3).</p> <p>A total of 15 medium-risk sites and one high-risk site are identified, and the remaining credible sources are assessed as low risk. Low risk ratings are further divided, between those where no further action is considered necessary when taking into consideration the proposed works in their proximity; and those that can be managed through the standard construction processes. The commitment for these requirements is made in ES Appendix 2.2: CoCP [REP1-157], including the specific requirements of GS028, GS006 and GS018.</p> <p>The 15 medium and one high-risk credible contaminant sources include those sources where the pollutant linkages cannot be effectively managed via the provisions set out in the REAC or sources which have not been subject to ground investigation. In accordance with the tiered approach recommended by the LCRM guidance, the medium and high-risk sites have been brought forward to ES</p>

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		<p>Appendix 10.11: Remediation Options Appraisal and Outline Remediation Strategy [REP1-165] with the commitment to undertake supplementary ground investigation, Detailed Quantitative Risk Assessment and the identification of specific remedial measures, if required. The management of these residual risks is secured through REAC GS001 and GS027 and requirement 6 of the draft DCO [REP2-004].</p> <p>As presented in the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165], the feasible remediation option is considered to be a combination of containment, excavation and disposal. This is an outline remediation strategy and the exact treatment options will be selected by the Contractor during the detailed design phase of the Project. The Remediation Options Appraisal and Outline Remediation Strategy [REP1-165] includes the requirement for a Verification Plan (Section 8) which sets out the verification processes that will be undertaken to demonstrate that the risks identified will be reduced to meet the agreed remediation criteria and objectives, including the requirement for a Verification Report which is secured by REAC GS016. The Verification Plan sets out the means for reviewing the effectiveness of the remediation and would be incorporated into the site-specific remediation strategies, acceptance of which would be in consultation with the relevant local authorities (REAC GS027). Furthermore and supporting this, REAC GS028 and requirement 6 of the draft DCO [REP2-004] secures the requirements in the event that unforeseen contamination is discovered during the construction of the Project, including the need for a watching brief protocol to be implemented during earthworks.</p> <p><i>'How has the Applicant assessed the potential for any release of contaminants to have an effect on mitigation or habitat creation as a result of the Proposed Development?'</i></p> <p>In accordance with LCRM, Appendix 10.6 the Preliminary Risk Assessment Report [APP-427] develops the Conceptual Site Model (CSM) that sets out potential pollutant linkages along the Project route. The aim of the CSM is to identify potential risks to human health, controlled waters, ecology and the environment, arising from the construction and operation of the Project, with regard to current or historical contaminative land uses. The assessment is based on identification of 'pollutant linkages', i.e. contaminant-pathway-receptor relationships following the approach described in LCRM and includes proposed ecological mitigation and habitat creation. The CSM is assessed and further refined with the identification of residual risks as presented in Appendix 10.9: Generic Quantitative Risk Assessment [APP-430, APP-431 and APP-432]. As stated previously, the identified risks to human health and controlled waters from pre-existing contamination can be avoided or mitigated by the measures secured through Project commitments set out in the CoCP [REP1-157], which includes the REAC; and the</p>

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		<p>remediation methodologies described in the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165].</p> <p>Furthermore, the following provisions are also related to the avoidance of impact on the proposed ecological mitigation and habitat creation.</p> <p>REAC GS028 secures the requirements in the event that unforeseen contamination is discovered during the construction of the Project, including the need for a watching brief protocol to be implemented during earthworks. In the event that an incident were to occur during operation which resulted in localised contamination, REAC GS019 secures the requirement for soils which had become significantly affected to be assessed and, if necessary, removed to reduce the risk of contamination migrating across a wider area or entering controlled waters.</p> <p>During construction, there is a potential risk of accidental spillages of oils, cement and fuels occurring through the movement of construction traffic and the storage of materials. Good practice measures include: the requirement for a pre-condition survey; the management of chemical, waste oils or fuel storage and refuelling activities within construction compounds; and controls on refuelling activities where these take place on worksites outside construction compounds. Measures to minimise any such impacts during the construction period are set out in ES Appendix 2.2: CoCP [REP1-157]. Commitments are also secured by REAC GS002, GS004, GS005 and GS006.</p> <p>The Applicant is aiming to maximise the reuse of materials excavated within the Project. Where excavated materials and soils are to be reused, recycled and/or recovered within the Order Limits this would be subject to the relevant regulatory controls. For example: Directive 2008/98/EC on Waste (Waste Framework Directive), Article 2, environmental permit (as per the Environmental Permitting (England and Wales) Regulations 2016), exemption and/or a Materials Management Plan (as per CL:AIRE's Definition of Waste: Development Industry Code of Practice³). All excavated materials and soils proposed for reuse would be required to meet risk-based acceptability criteria applicable to their intended use to ensure they are suitable for use and do not lead to an adverse impact from contamination.</p> <p>The CoCP [REP1-157] REAC GS003 secures the requirement to proactively manage the potential impacts from geohazards, which would include land instability and land contamination. During detailed design and construction activities the Contractors would carry out further ground investigation and</p>

³ CL:AIRE (2011). The Definition of Waste: Development Industry Code of Practice. <https://www.claire.co.uk/component/phocadownload/category/8-initiatives?download=212:definition-of-waste-development-industry-code-of-practice>

PINS ID	External Stakeholder (where applicable)	Question / Response
		<p>establish a programme of instrumentation and monitoring in line with Section 7 of ES Appendix 10.2: Stability Report [APP-423] and Section 8 of the Remediation Options Appraisal and Outline Remediation Strategy [REP1-165].</p> <p>The CoCP [REP1-157] also secures a suite of measures to reduce the risks of pollution of water environment receptors, key examples including RDWE002, which secures inspection and maintenance of construction worksite drainage systems to ensure they continue to operate to their design standard, safeguarding surface and groundwater quality; and RDWE006 which stipulates that work site drainage systems would incorporate pollution control systems designed in line with Control of Water Pollution from Construction Sites (C532)⁴ or as agreed with the Secretary of State.</p> <p>During operation of the Project, discharges to the water environment would be managed via the operational drainage design, which incorporates sustainable drainage measures to provide for settlement of suspended solids and treatment of other potential pollutants, with assessments detailed in ES Appendix 14.3: Operational Surface Water Drainage Pollution Risk Assessment [APP-456], proving the efficacy of these measures.</p>
ExQ1_Q6.1.2	Environment Agency	<p>East Tilbury Landfill</p> <p>It has been stated by the Environment Agency that the East Tilbury Landfill has potentially high levels of contamination including leachates. There are also concerns with the potential failure of the river frontage. - How has the Applicant assessed the risk of the Proposed Development increasing the rate of failure of the river frontage? - Should the frontage show signs of deterioration either during the construction or operational periods, can the Applicant or the Environment Agency confirm that appropriate access routes and working space are available to enable works to reinforce the bank to take place? - Has the Applicant assessed the effect that such an event would have on riverine/ marine biodiversity? - Can the Applicant confirm that such risks are to be monitored and remediation will be undertaken if necessary? - How is monitoring and remediation secured in the dDCO?</p>

⁴ CIRIA (2001). Control of water pollution from construction sites. Guidance for consultants and contractors (C532). https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C532&Category=BOOK

PINS ID	External Stakeholder (where applicable)	Question / Response
		<p>Response:</p> <p><i>'East Tilbury Landfill It has been stated by the Environment Agency that the East Tilbury Landfill has potentially high levels of contamination including leachates. There are also concerns with the potential failure of the river frontage.'</i></p> <p>It should be noted that no works are proposed along the East Tilbury Landfill river frontage.</p> <p>Following early engagement with the Environment Agency, the Applicant has taken appropriate steps to limit activities within the boundary of the East Tilbury Landfill and implemented a design that seeks to avoid cross-boundary, indirect effects on the landfill site. The Project has included provision for a temporary access at its northern end, however, the design and use of which (in terms of number of movements and type of vehicles) would be subject to agreement with the Environment Agency prior to its installation in line with Project commitment GS020 in Environmental Statement (ES) Appendix 2.2: Code of Construction Practice [REP1-157].</p> <p>A characterisation of East Tilbury Landfill is provided in Section 3 and Section 4 of ES Appendix 10.7: East Tilbury Landfill Risk Assessment [APP-428]. ES Appendix 10.7 presents an assessment of the potential effects of the Project's construction activities at the North Portal on East Tilbury Landfill by reviewing potentially active pollutant linkages. It is concluded that the Project will have a negligible impact on environmental quality by either affecting existing pathways or by the creation of new pathways. The risk assessment concluded that the Project would not create active pollutant linkages, and that no unacceptable risk is present to the identified receptors from the proposed dewatering at the North Portal.</p> <p>Annex K of ES Appendix 14.5: Hydrogeological Risk Assessment [APP-458] and [APP-459] presents the Project's numerical groundwater model developed to assess the potential effects that the construction activities and operation of the North Portal may have on the local groundwater flows and quality. Paragraph 7.3.1 of the Hydrogeological Risk Assessment [APP-458] confirms that the secured mitigation measures, including GS021, are able to minimise groundwater inflows into the North Portal excavation and minimise any potential for contaminant mobilisation.</p> <p>More widely, ES Appendix 10.2: Stability Report [APP-423] presents an assessment of the proposed tunnel construction works including piling, retaining walls and earthwork activities. It assesses the potential ground movements associated with the construction of the Project, determines the technical feasibility of the construction methods and presents appropriate mitigation strategies. The assessment does not highlight a potential risk of failure of the river frontage as a result of the proposed works.</p>

PINS ID	External Stakeholder (where applicable)	Question / Response
		<p><i>'How has the Applicant assessed the risk of the Proposed Development increasing the rate of failure of the river frontage?'</i></p> <p>It should be noted that no works are proposed along the East Tilbury Landfill river frontage. Relevant assessments with respect to East Tilbury landfill are set out in our response above.</p> <p>Within the Project Order Limits, minor temporary works are proposed within the river channel to facilitate the construction of a construction phase drainage outfall to the River Thames. Works in the vicinity of the Project's river frontage include the construction of Tilbury Fields, the bored tunnels, improvement works to the existing footpath and installation of a permanent outfall at Bowaters Sluice.</p> <p>These works proposed by the Project would not result in a change to the existing East Tilbury Landfill river frontage as a result of the construction or operation of the Project over and above the naturally occurring erosion processes.</p> <p><i>'Should the frontage show signs of deterioration either during the construction or operational periods, can the Applicant or the Environment Agency confirm that appropriate access routes and working space are available to enable works to reinforce the bank to take place?'</i></p> <p>It should be noted that no works are proposed along the East Tilbury Landfill river frontage and the current condition will not worsen as a result of the construction or operation of the Project over and above the naturally occurring erosion processes.</p> <p>The construction or operation of the Project will not impede future interventions to the East Tilbury Landfill river frontage by others (for example the landowner, local authority or regulatory bodies), should repair or reinforcement works to the East Tilbury Landfill river frontage be required.</p> <p>Existing access to the East Tilbury Landfill river frontage will normally be maintained via the track from Bowaters at the north-western edge of the East Tilbury Landfill and via the Public Right of Way, Footpath 146#2/Two Forts Way. The latter may not be available for a period currently estimated to be between eight and ten weeks during the construction of the water inlet with self-regulating valve or equivalent structure at Coalhouse Point, however alternative access would still be maintained via Bowaters. No other access restriction as a result of the construction or operation of the Project is anticipated.</p>

PINS ID	External Stakeholder (where applicable)	Question / Response
		<p><i>'Has the Applicant assessed the effect that such an event would have on riverine/ marine biodiversity?'</i> No works are proposed along the East Tilbury Landfill river frontage and the current condition will not worsen as a result of the Project over and above naturally occurring erosion processes. Therefore, the effects on marine biodiversity have not been assessed.</p> <p><i>'Can the Applicant confirm that such risks are to be monitored and remediation will be undertaken if necessary?'</i> <i>'How is monitoring and remediation secured in the dDCO?'</i></p> <p>It should be noted that no works are proposed along the East Tilbury Landfill river frontage and the current condition will not worsen as a result of the Project over and above the naturally occurring erosion processes. Therefore, the Applicant deems that there is no cause for the Project to include monitoring of the current condition of the East Tilbury Landfill river frontage and its later evolution, and hence no such monitoring is secured in the DCO.</p>

3 Responses to the Examining Authority's ExQ1 7

No questions submitted by the Examining Authority for this topic.

4 Responses to the Examining Authority's ExQ1 8

PINS ID	External Stakeholder (where applicable)	Question / Response
ExQ1_Q8.1.1	Environment Agency	<p>Permitting</p> <p>Please provide an update in respect of the on-going permitting discussions? In the event that these do not progress as necessary can the Environment Agency set out the implications of this and whether any remedial mitigation could be secured through the DCO to overcome any outstanding matters?</p>
		<p>Response:</p> <p>Environmental permit discussions with the Environment Agency have been ongoing through the pre-examination and examination phase with collaborative workshops undertaken between the Applicant and the Environment Agency. The Applicant is discussing a permitting strategy with the Environment Agency as documented in the SoCG [REP1-058]. An updated SoCG is targeted for submission at Deadline 5.</p> <p>As detailed in the Consents and Agreements Position Statement [REP1-047], the permits are subject to detailed design and the chosen Contractor will further develop the permit options with the Environment Agency during the pre-application phase.</p> <p>The draft Development Consent Order (dDCO) [REP2-004] contains protective provisions for the Environment Agency associated with mitigating the implications of extant third-party environmental permit operators within the Order Limits (paragraph 116(5)(a) and (b) of Schedule 14, Part 9 of the dDCO). The Environment Agency and the Applicant are currently discussing the drafting. As indicated by the Applicant at ISH7, a revised draft of the dDCO will be submitted at Deadline 4 containing some revisions in relation to the interface of the Project with existing permits.</p>
ExQ1_Q8.1.3	Thurrock Council	<p>Waste Quantities</p> <p>Please provide an update on the preparation of the technical note being prepared by the Applicant and any on-going discussions between the parties?</p>
		<p>Response:</p> <p>The Applicant would refer the reader to the Technical Note on Earthworks Quantification [REP2-076] which was submitted at Deadline 2.</p>

PINS ID	External Stakeholder (where applicable)	Question / Response
		<p>The Technical Note on Earthworks Quantification [REP2-076] has been developed to provide further clarity on the methodology used to determine the earthwork quantities outlined in Table 7.1 in Environmental Statement Appendix 2.2 Annex B: Outline Materials Handling Plan [APP-338]. The Applicant will maintain an ongoing dialogue not only with Thurrock Council but also with any other interested parties on this matter. This matter is captured in the Statement of Common Ground between the Applicant and Thurrock Council [APP-130] under items: 2.1.201, 2.1.205 (partially), 2.1.114, 2.1.113, 2.1.112.</p>
ExQ1_Q8.1.5	N/A	<p>Waste Management (Recycling)</p> <p>Can the Applicant clarify its strategy for off-site recycling including an assessment of capacity at local facilities. Is it necessary to update the Commitments in the REAC [REP1-157] accordingly?</p> <p>Response:</p> <p>The management of waste offsite would not only be limited to recycling but also through other routes such as reuse and recovery (as defined by the Waste Framework Directive). The route that the waste will take would be highly dependent upon the external market, which is something that the Applicant has no control over. Furthermore, the capacity at these waste facilities is dependent upon the environmental permits held by third parties, and as above, the Applicant cannot exert control upon these organisations. A description of the available capacity of regional waste management facilities is presented in Table 11.6 and Table 11.7 in 6.1 Environmental Statement – Chapter 11 – Material Assets and Waste [APP-149]. This available capacity is put into context and assessed against forecast Project waste quantities in paragraph 11.6.38, which reports the Project would use approximately 0.5% of the annual recycling / recovery capacity within Essex, Kent, and East London Waste Authority. However, the Development Consent Order (DCO) application is constructed in a way to promote and influence behaviours in order to prioritise the reuse, recycling and recovery of wastes ahead of disposal. These are demonstrated and secured by a number of Project commitments included within the Register of Environmental Actions and Commitments in Section 7 of ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [APP-336] including but not limited to MW006, MW007, MW010, MW013, MW015 and MW016.</p> <p>The Applicant has developed an outline Site Waste Management Plan (oSWMP) [APP-337] to support the DCO application. In producing the oSWMP, the Applicant has developed a consistent framework for the following:</p>

PINS ID	External Stakeholder (where applicable)	Question / Response
		<ul style="list-style-type: none"> • Supporting the implementation of the waste hierarchy. • The management and recording of material resources used and waste arising from construction, demolition and excavation activities. • Evidence that the Project meets regulatory requirements. • Reduction of waste management costs. • Recording of design and construction decisions that demonstrate good and best practice in material resource use and waste minimisation and management. <p>Section 6.5 of the oSWMP [APP-337] sets out the waste monitoring requirements for the Contractors. Specifically in paragraph 6.5.3, the Contractors would submit quarterly monitoring waste reports to National Highways. Such regular and early predictions on the generation of wastes will help to provide as much time as possible to third parties in order to secure capacity.</p> <p>In conclusion, the Applicant does not consider that it is necessary to update the commitments detailed in ES Appendix 2.2: Code of Construction Practice, First Iteration of Environmental Management Plan [APP-336], since these are sufficiently robust.</p>
ExQ1_Q8.1.7	Applicant and LPAs	<p>Materials Handling</p> <p>Please could the Parties provide comments on what, if any, further use of wharves close to the Order Limits for the delivery of materials, particularly aggregates, could be utilised? If so, how should the Outline Materials Handling Plan [APP-338] be updated?</p> <p>Response:</p> <p>The Applicant's approach to river use for material transportation is detailed in Chapter 6 of the outline Materials Handling Plan [APP-338] (oMHP). Within this document, the baseline commitment to river usage for material transportation is secured. Furthermore, the Applicant has included a better-than-baseline commitment, whereby the Contractors would be responsible for actively maximising river transport for bulk aggregates to the North Portal construction area beyond the baseline commitment, whenever reasonably practicable. This demonstrates the Applicant's intent to exceed the baseline commitment as the procurement and construction details are progressed as part of the next phase of the Project.</p> <p>The Applicant has reviewed the existing suppliers with river access facilities, to better understand the suitability of river use for material transportation, this is set out in Annex B.1 of the oMHP [APP-338]. In</p>

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		<p>determining the river use commitment, the Applicant has taken a proportionate approach, aiming to extract the advantages associated with river use while simultaneously maintaining a level of adaptability to promote a competitive, environmentally better, value for money project. This dual commitment showcases the Applicant's robust position on utilising the river for material transportation. Consequently, an additional commitment to promote the use of wharves near to the Order Limits for material transportation or suppliers located in close proximity to wharves is considered unnecessary. The existing commitments provide a robust position for efficient material movement, aligning with the purpose of this commitment to minimise the impacts arising from construction-related import of materials associated with the Project. As a result, the Applicant does not consider there is a need to update the oMHP [APP-338].</p> <p>The Applicant has set out in more detail its rationale for use of the river for material transportation in response to ExQ1_Q4.6.6.</p> <p>Separate to the suppliers identified in Annex B.1 of the oMHP, the Applicant has also reviewed the possibility of utilising existing jetties, which offer direct access to the Project site, for material handling, as outlined in paragraphs 4.2.4, 4.3.4 and 4.3.5 of the oMHP [APP-338].</p> <p>North of the River Thames in proximity to the North Portal area, both jetties are fully utilised by existing landowners and business owners and do not have additional capacity to import materials for the construction of the Project. Furthermore, the busy navigational channel of the River Thames precludes the potential for the creation of a new jetty (deep or shallow water) on the north side of the river within the Order Limits. Further detail on the use of these jetties is set out in paragraphs 8.2.20 to 8.2.26 of the oMHP [APP-338].</p> <p>For works situated south of the river, the Thames Estuary and Marshes Ramsar site is positioned between the construction compound and the river. Consequently, this geographical feature poses a significant constraint when it comes to establishing a dedicated jetty or similar river infrastructure for the purpose of material transportation and handling. In addition, utilising any existing infrastructure in this location is dependent on utilising the local road network, which the Applicant is seeking to minimise.</p>
ExQ1_Q8.1.8	N/A	<p>Waste Material Monitoring</p> <p>The Applicant has indicated [REP2-064] that the Contractor(s) will report on waste generated, including that exported off-site. Can the Applicant provide details of how any deviations above the predicted amounts would be managed and how such procedures are/ could be secured in a DCO and the relevant certified documents?</p>

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		<p>Response:</p> <p>The development and use of the construction Site Waste Management Plan would be the mechanism for capturing deviations in the prediction phase (detailed design) and post creation phase (construction delivery).</p> <p>The outline Site Waste Management Plan (oSWMP) [APP-337] sets out the overarching principles and procedures that would be applied for the management of waste, including surplus excavated material identified through the earthwork quantities, during the construction phase of the Project. Prior to the commencement of construction, the Contractors would, for each part of the authorised development, prepare and submit a Construction Site Waste Management Plan (CSWMP) for the approval of the Secretary of State, under Requirement 4 of the draft Development Consent Order [REP2-004]. The CSWMP would need to be written in accordance with the oSWMP, and would need to be updated as a live document throughout the construction phase.</p> <p>Section 6.5 of the oSWMP [APP-337] sets out the procedures for the monitoring of the Contractor’s waste performance against forecast targets, and progress on compliance with Project waste commitments MW001 to MW015. This would be monitored through quarterly monitoring waste reports submitted to National Highways. Where targets are projected to be missed, the Contractors will be required to provide a plan setting out how they can rectify the situation and bring it back to compliance.</p> <p>Through Project commitment MW006, the Contractors would appoint a Materials and Waste Manager to ensure that the waste hierarchy is implemented, and opportunities are identified and implemented to reduce waste generation or improve reuse, recycling and/or recovery rates throughout detailed design and construction. The Materials and Waste Manager would be responsible for ensuring compliance with waste mitigation requirements set out in the Register of Environmental Actions and Commitments (REAC) (within Environmental Statement Appendix 2.2: Code of Construction Practice [REP1-157]), and that measures or plans for the management of site waste in accordance with Requirement 4(3) of the draft Development Consent Order [REP2-004] are written and implemented.</p>
ExQ1_Q8.1.10	N/A	<p>Monitoring</p> <p>In the event that waste, or the provision of materials, rose above the anticipated levels, what measures would be put in place to manage and mitigate this? How would any remedial action be secured?</p>

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		<p>Response:</p> <p>Through the DCO application, the Applicant has set out to develop a reasonable worst-case scenario and therefore appropriate levels of conservatism were incorporated into the assessment of material assets and waste. By taking this approach, it is expected that the Contractors will be able to work within and better the assessed environmental impacts reported.</p> <p>Section 14 of the Introduction to the Application [APP-003] describes the Project’s control plan. Through the control plan, a number of control documents have been developed for the DCO application which present the mitigation measures identified in the application that must be implemented during design and construction to reduce the adverse effects of the Project from its material consumption and waste generation. The Applicant has developed a set of control documents aimed at effectively mitigating adverse effects arising from the construction works including material consumption and waste generation.</p> <p>Below are the relevant documents, notably the outline Site Waste Management Plan (oSWMP) [APP-337] containing further detail of the specific controls related to monitoring and management of waste. Collectively these demonstrate the Applicant's commitment to establishing a resilient framework for monitoring and managing waste impacts and sufficient control measures to prevent exceeding those limits:</p> <ul style="list-style-type: none"> • Environmental Statement (ES) Appendix 2.2: Code of Construction Practice (CoCP) [REP1-157]. Sets out a framework for how the mitigation and management of environmental effects will be delivered and maintained. • ES Appendix 2.2 Annex B: Outline Materials Handling Plan [APP-338]. Sets out the controls for the handling and transportation of material and waste. • Outline Traffic Management Plan for Construction [APP-547]. Sets out the framework and control measures for managing the Project’s impact to the road network. • ES Appendix 2.2 Annex A: Outline Site Waste Management Plan (oSWMP) [APP-337]. <p>In producing the oSWMP [APP-337] to support the DCO application, the Applicant has developed a consistent framework for the following:</p> <ul style="list-style-type: none"> • Supporting the implementation of the waste hierarchy • The management and recording of material resources used and waste arising from construction, demolition and excavation activities

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		<ul style="list-style-type: none"> • Evidence that the Project meets regulatory requirements • Reduction of waste management costs • Recording of design and construction decisions that demonstrate good and best practice in material resource use and waste minimisation and management <p>Section 2.4 clarifies the status of the oSWMP [APP-337] and in paragraph 2.4.3 specifically states: ‘Prior to the commencement of construction, the contractors would, for each part of the authorised development, prepare and submit a Construction Site Waste Management Plan (CSWMP) for the approval of the Secretary of State, under Requirement 4 of the draft Development Consent Order [REP2-004]. The CSWMP would need to be written in accordance with this oSWMP and would need to be updated as a live document throughout the construction phase’.</p> <p>Section 6.5 of the oSWMP [APP-337] sets out the waste monitoring requirements for the Contractors. Specifically in paragraph 6.5.3, the Contractors would submit quarterly monitoring waste reports to the Applicant, which would include the following as a minimum:</p> <ul style="list-style-type: none"> • Evidence of no warning letters or notices from a regulating authority within the reporting period • Summary of waste management performance against targets, consents, environmental permits and exemptions registered for construction activities within the Order Limits in the monitoring period • A summary of waste sent offsite, its end destination and status (i.e. recovered, reused, recycled or disposed) at the end destination, and compliance against the Project targets • Where targets are projected to be missed, the Contractors will be required to provide a plan setting out how they can rectify the situation and bring it back to compliance • A copy of the latest progress towards compliance with commitments MW001 to MW015 in the Register of Environmental Actions and Commitments (REAC), within the CoCP [REP1-157]. <p>This mechanism noted above will allow performance against forecast waste targets to be closely monitored with deviations and corrective actions identified and implemented at early as possible. It will also ensure that forecast waste quantities should fall within the Rochdale Envelope developed by the DCO application.</p> <p>The material demand assessments also represent a conservative approach, and the Project will prioritise the reuse, recovery and recycling of materials generated by site activities through demolition or</p>

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		<p>excavations by the construction works. A number of secured commitments have been included within the REAC, to reduce the material demand and consumption of the detailed design including but not limited to:</p> <ul style="list-style-type: none"> • REAC MW007 Excavated material (and all wastes) would be managed in line with the waste hierarchy. Preference would be given to appropriate reuse, recycling and/or recovery before disposal where feasible and permitted by the design. Where excavated materials and soils are to be reused, recycled and/or recovered within the Order Limits this would be subject to the relevant regulatory controls. For example: Directive 2008/98/EC on Waste (Waste Framework Directive), Article 2, environmental permit (as per the Environmental Permitting (England and Wales) Regulations (2016)), exemption and/or a Materials Management Plan (as per the Definition of Waste: Development Industry Code of Practice (CL:AIRE, 2011). Where excavated materials and soils cannot be reused, recycled and/or recovered within the Order Limits opportunities would be sought within schemes or facilities outside of the Order Limits. The final option would be disposal. • REAC MW008 The Contractor shall use the information and data available to identify what site won excavated materials can be used as Class I-IV material or aggregate. Should it be required, supplementary data and information shall be obtained in order to assess the potential availability and suitability of excavated materials to meet the relevant material specifications. • REAC MW010 in ES Appendix 2.2: CoCP [REP1-157] includes measures for the contractor to implement to ensure best practice materials management within the construction worksite which will reduce the risk of wastage. • REAC MW003 in ES Appendix 2.2: CoCP [REP1-157] states that during detailed design there would be an opportunity for the Contractors to further optimise the design and standardise (where reasonably practicable) construction aspects to increase efficiency of materials use in production, and reduce waste production. This initiative would be progressed through detail design and documented in a material efficiency design report submitted to the Applicant prior to construction.

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