

Lower Thames Crossing

6.5 Habitats Regulations Assessment – Screening Report and Statement to Inform an Appropriate Assessment Appendix E LA 115 Screening Matrices

APFP Regulation 5(2)(g)

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Appendix E LA 115 Screening Matrices

E.1 Introduction

E.1.1 HRA Screening Matrices based on templates from Appendix A of DMRB LA 115 Habitats Regulations Assessment (Highways England, *et al.*, 2020) are presented in Table E.2 to Table E.5, for the European sites listed in Table E.1.

Table E.1 Potential effects summary

European site name and designation	Effects described in screening submission:	Presented / considered in screening submission under:
Thames Estuary and Marshes SPA	Land take in the terrestrial and aquatic environment Change in air quality as a result of dust emissions during construction Change in air quality as a result of vehicle emissions in construction and operation Changes in groundwater quality and quantity as a result of tunnel construction and operation Changes in surface water quality and quantity – construction and operation Introduction/spread of Invasive Non-Native Species – terrestrial and marine environment	Reduction in habitat area
	Changes in noise and vibration – construction works and vehicles Changes in noise and vibration – underwater and above ground – tunnel construction only Changes in noise and vibration – vehicles – operation Changes in light levels – construction & operation Changes in visual disturbance – people/machines in eyeline – construction Changes in visual disturbance – vehicles in eyeline – operation Change in recreational pressure – construction and operation	Disturbance to species
	Collision of qualifying species with vehicles in operation Collision of qualifying species with utilities infrastructure during construction and operation	Reduction in species density
	Coastal squeeze resulting from sea level rise	Climate change
Thames Estuary and	Land take in the terrestrial and aquatic environment Change in air quality as a result of dust emissions during construction	Reduction in habitat area

European site name and designation	Effects described in screening submission:	Presented / considered in screening submission under:
Marshes Ramsar	Change in air quality as a result of vehicle emissions in construction and operation Changes in groundwater quality and quantity as a result of tunnel construction and operation Changes in surface water quality and quantity – construction and operation Introduction/spread of Invasive Non-Native Species – terrestrial and marine environment	
	Changes in noise and vibration – construction works and vehicles Changes in noise and vibration – underwater and above ground – tunnel construction only Changes in noise and vibration – vehicles – operation Changes in light levels – construction & operation Changes in visual disturbance – people/machines in eyeline – construction Changes in visual disturbance – vehicles in eyeline – operation Change in recreational pressure – construction and operation	Disturbance to species
	Collision of qualifying species with vehicles in operation Collision of qualifying species with utilities infrastructure during construction and operation	Reduction in species density
	Coastal squeeze resulting from sea level rise	Climate change
Epping Forest SAC	Change in air quality as a result of vehicle emissions in operation	Reduction in habitat area
North Downs Woodlands SAC	Change in air quality as a result of vehicle emissions in operation	Reduction in habitat area

E.2 Thames Estuary and Marshes SPA

Table E.2 HRA Screening matrix for the Thames Estuary and Marshes SPA

Project	Lower Thames Crossing	
European site under consideration	Thames Estuary and Marshes SPA (UK9012021)	
Date	Author (name/organisation):	Verified (name/organisation):
August 2022	Iona Pearson CEnv MCIEEM, Jacobs	Russell Cryer CEnv MCIEEM, Jacobs
Description of project		
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European site by virtue of:		
Size and scale (road type and probable traffic volume)	The Project is a road scheme with mainly three-lane carriageway in each direction. The route is approximately 23km long, 4.25km of which is in tunnel. It connects the A2 and M2 in Kent, east of Gravesend, with the M25 south of junction 29 via a twin bored tunnel under the River Thames east of Tilbury.	
Land take	The land required to construct the Project is defined by the Order Limits and totals approximately 2,394 hectares. There would be no direct habitat loss at this European site. There would be habitat loss (approximately 3434ha) within functionally linked land associated with this European site.	
Distance from the European site or key features of the site (from edge of the project assessment corridor)	The European site is approximately 0.06km east of the Project. The functionally linked land is crossed by the Order Limits.	
Resource requirements (from the European site or from areas in proximity to the site, where of relevance to consideration of impacts)	No resource from within the European site is required.	
Emissions (e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)	<p>Water quality</p> <p>The Project has been designed with a surface water drainage system that would discharge clean surface water at greenfield runoff rate during construction and operation. It has been designed in accordance with established highway drainage standards. The Project's environmental standards would be secured through the DCO and controlled via the Environment Agency discharge consenting regime. This would ensure no pollution of receiving waterbodies within functionally linked land during construction and operation.</p> <p>Air quality</p> <p>The Project has the potential to affect local air quality of the functionally linked land during construction as a result of dust emissions. However, the Project has a number of standard industry best practice commitments in place to ensure dust is</p>	

	<p>managed throughout the construction period to avoid release and trackout. The Project would be secured through the DCO and commitments are implemented via the Code of Construction Practice (Application Document 6.3). This would avoid and reduce dust release to the surrounding environment and the functionally linked land would not be affected.</p> <p>The Project has the potential to affect local air quality during construction and operation as a result of traffic emissions from the Affected Road Network (ARN). This European site is not within 200m of the construction ARN or operational ARN and will not be affected.</p>
Excavation requirements (e.g. impacts of local hydrogeology)	<p>The Project would require land excavation for the new tunnel within the functionally linked land which could result in changes to the surrounding groundwater in terms of quantity and quality. The impact on the groundwater flows for the construction of the tunnel have been modelled as part of the hydrogeological assessment and the results showed that with the Project design which included an advance grout tunnel south of the river and a slurry wall at the North Portal, there would be a negligible change in groundwater. Any effects on the functionally linked land are therefore considered inconsequential.</p>
Transportation requirements	<p>The Project would require materials transported to and from the site via road. The access road to the northern tunnel entrance compound is within the functionally linked land associated with this European site. The noise, vibration and visual disturbance associated with material deliveries and access to the construction site may result in disturbance to qualifying species of the European site within functionally linked land.</p>
Duration of construction, operation, etc.	<p>The construction period proposed is six years commencing in 2025. The Project would be operational from 2030. There is no decommissioning proposed.</p>
Other	<p>Disturbance to qualifying species of the European site within functionally linked land through noise, vibration and visual disturbance resulting from the construction and operation of the Project.</p> <p>The noise and vibration associated with the tunnel boring machine would not be perceivable beyond the water column, particularly given the background level of noise from shipping, and no disturbance to qualifying species of the European site within functionally linked land is predicted.</p> <p>Disturbance, to qualifying species of the European site within functionally linked land, from changes in recreational pressure is limited to the potential visitor pressures at Tilbury Fields during Project operation.</p> <p>There is predicted to be no changes in recreational pressure from Project construction as the use of the coastal paths through the functionally linked land would not be altered. Any changes in recreational pressure at the European site due to the Project providing easier access to the site (wider visitor pressures) is not predicted to occur as the distance any visitor would have to drive by using the Project would be greater than</p>

	<p>the distances given in both the Essex and Kent recreational strategy documents (Essex County Council, 2019; Birdwise North Kent SAMMS Project Board, 2018).</p> <p>The Project is committed to minimising and managing light emissions on the construction site such that the 0.5 lux contour is contained within the construction compound boundaries and no light spill would be perceivable within any European sites or functionally linked land. Operational phase highway lighting is associated with the main line and junctions across the Project and within the tunnel. The 0.5 lux contour is in cutting where the highway crosses functionally linked land and no light spill would intersect with any European sites or functionally linked land.</p> <p>Estuarine/marine Invasive Non-Native Species have been documented in the Thames Estuary (as reported in the ES Chapter 9 Marine Biodiversity (Application Document 6.1)). The Project also includes measures to manage the risk of introducing Invasive Non-Native Species [MB006].</p> <p>Terrestrial Invasive Non-Native Species have not been recorded within the Order Limits, however, the Project includes measures to identify prior to construction and remove or treat to prevent their spread, in accordance with standard best practice [TB005].</p> <p>The new road would be in tunnel under the intertidal habitats and coastal marshes (functionally linked land) used by qualifying species therefore there is no risk of collision with traffic, and no impact is predicted to occur.</p> <p>The Project design requires the diversion of a number of electricity overhead lines as part of the construction phase. The diversions are limited to areas adjacent to the existing infrastructure. Therefore, the changes across the functionally linked land used by qualifying features north and south of the River Thames are such that no increased risk of collision is anticipated.</p>
Description of avoidance and/or mitigation measures	
Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	No specific mitigation measures intended to address potential effects on this European site are taken into account in this assessment, in line with case law.
Location	N/A
Evidence for effectiveness	N/A
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	N/A
Characteristics of European site(s)	
A brief description of the European site to be produced, including information on:	
Name of European site and its EU code	Thames Estuary and Marshes SPA UK9012021

Location and distance of the European site from the proposed works	Approximately 0.1km east of the Project
European site size	4802.47 ha (55.7% marine)
Key features of the European site including the primary reasons for selection and any other qualifying interests	<p>ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports:</p> <p>A082 <i>Circus cyaneus</i>; Hen harrier (Non-breeding)</p> <p>A132 <i>Recurvirostra avosetta</i>; Pied avocet (Non-breeding)</p> <p>ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports:</p> <p>A141 <i>Pluvialis squatarola</i>; Grey plover (Non-breeding)</p> <p>A143 <i>Calidris canutus</i>; Red knot (Non-breeding)</p> <p>A149 <i>Calidris alpina alpina</i>; Dunlin (Non-breeding)</p> <p>A156 <i>Limosa limosa islandica</i>; Black-tailed godwit (Non-breeding)</p> <p>A162 <i>Tringa totanus</i>; Common redshank (Non-breeding)</p> <p>ARTICLE 4.2 QUALIFICATION (79/409/EEC) On passage the area regularly supports:</p> <p>A137 <i>Charadrius hiaticula</i>; Ringed plover (Non-breeding)</p> <p>ARTICLE 4.2 QUALIFICATION (79/409/EEC): An internationally important assemblage of birds. Over winter the area regularly supports:</p> <p>75,019 waterfowl (five-year peak mean 1991/92-1995/96)</p> <p>Included within JNCC SPA 3rd Review (Stroud, et al., 2016) as a site with boundary review needs for the following species:</p> <p>European white-fronted goose <i>Anser albifrons albifrons</i></p> <p>Lapwing <i>Vanellus vanellus</i></p>
Vulnerability of the European site – any information available from the standard data forms on potential effect pathways	<p>M01 Changes in abiotic conditions</p> <p>I01 Invasive Non-Native Species</p> <p>G01 Outdoor sports and leisure activities, recreational activities</p> <p>M02 Changes in biotic conditions</p>
European site conservation objectives – where these are readily available	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> • the extent and distribution of the habitats of the qualifying features • the structure and function of the habitats of the qualifying features • the supporting processes on which the habitats of the qualifying features rely • the population of each of the qualifying features • the distribution of the qualifying features within the site.

Assessment criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European site.	
<p>The Project could negatively affect the qualifying species of the European site through loss or noise, vibration and visual disturbance of functionally linked land.</p> <p>The individual elements of the Project that could affect areas of functionally linked land north and south of the River Thames are:</p> <ul style="list-style-type: none"> • Northern tunnel entrance compound • Northern tunnel entrance compound temporary drainage pipeline and outfall • Operational tunnel drainage outfall • A226 Gravesend Road compound and Milton compound • Southern tunnel entrance compound construction drainage discharge • Ecological mitigation areas 	
Initial assessment	
The key characteristics of the site and the details of the European site to be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:	
Reduction of habitat area	<p>No direct loss within the European site itself.</p> <p>The construction of the Project would result in the direct loss of approximately 343ha of functionally linked land. Of this, approximately 58.55ha would be permanently lost for operation with the remainder reinstated.</p> <p>Any changes in the area or quality of suitable habitat could result in birds needing to find replacement habitat with knock-on effects on the population size within the European site.</p> <p>Project field survey data shows that individuals of qualifying species from this European site use the functionally linked land that would be lost but there is uncertainty with regard to how these individuals contribute to the site population, and their use of functionally linked land.</p>
Disturbance to key species	<p>The Project would not result in disturbance of qualifying species within the European site.</p> <p>The Project construction would cause noise, vibration and visual disturbance to qualifying species within functionally linked land associated with the European site. Disturbance could occur within approximately 485ha of functionally linked land north and south of the River Thames. The habitats comprise intertidal mud as well as agricultural land and coastal grassland. The field surveys recorded use; of agricultural land and coastal grassland by species from the SPA/Ramsar overwintering assemblage, and of the intertidal habitats by a range of species including SPA/Ramsar individual qualifying features as well as the overwintering assemblage.</p> <p>For Project operation, the road is in tunnel for much of the functionally linked land and the potential for disturbance is only likely within functionally linked land north of the River Thames between the North Portal and the Tilbury Loop rail line. Approximately 65.4ha of agricultural habitat within the functionally linked land would be affected by changes in noise and visual disturbance greater than the agreed thresholds</p>

	<p>(>3dB change or level >55dB). The field surveyed recorded use of these areas by a limited number of species from the SPA/Ramsar overwintering assemblage.</p> <p>The disturbance within the functionally linked land could cause changes in foraging behaviour and/or reduction in foraging opportunities which result in population declines of the qualifying species.</p>
Habitat or species fragmentation	No effects have been identified for this European site.
Reduction in species density	<p>No effects are anticipated as the habitat availability and existence of these risks already within the functionally linked land means the amount of change would not be perceptible in terms of population numbers of the European site.</p> <p>No effects are anticipated as a result of bird collisions with vehicles as the new highway is in tunnel within the area used by the qualifying species.</p>
Changes in key indicators of conservation value (water quality, etc.)	The Project has the potential to indirectly (as a result of habitat loss and disturbance within functionally linked land) reduce numbers of the qualifying species.
Climate change	<p>The European site is coastal in location and are therefore vulnerable to sea level rise, coastal flooding and coastal erosion. These direct consequences of climate change could result in loss or fragmentation of habitat and negative effects on the population sizes of the qualifying features, primarily waders and waterfowl. No likely significant effect (LSE) is anticipated with regard to climate change as there would be no long-term coastal squeeze effects attributed to the Project and this European site is not listed as sensitive to changes in ecological climate space or water resources / precipitation as a result of erratic weather patterns.</p>
Describe any likely impacts on the European site as a whole in terms of:	
Interference with the key relationships that define the structure of the site	No effects on the structure of the European site.
Interference with key relationships that define the function of the site	<p>There would be no direct effects on the function of the European site.</p> <p>The effects identified that could affect the function of the European site are as a result of the Project impacting the qualifying features outside the boundary of the European site (within functionally linked land). The key potential LSEs are a result of loss of habitat and disturbance.</p>
Indicate the significance as a result of the identification of impacts set out above, in terms of:	
Reduction of habitat area	Potentially significant due to loss of suitable habitat for qualifying features within the functionally linked land associated with the European site.

Disturbance to key species	Potentially significant disturbance of qualifying species within the functionally linked land as a result of construction phase noise, vibration and visual disturbance.
Habitat or species fragmentation	No effects have been identified for this European site.
Disruption	No effects have been identified for this European site.
Change to key elements of the site (e.g. water quality, hydrological regime etc.)	No effects have been identified for this European site.
Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
The Project could affect the qualifying features of the European site within functionally linked land, as a result of reduction in habitat area and disturbance to key species. The scale and magnitude of these effects in the functionally linked land are such that LSEs on the European site could not be discounted.	
Outcome of screening stage.	Sufficient uncertainty remains
Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant correspondence)?	Natural England was consulted on the early sight draft of this assessment (not including AQ effects) 6 August 2021 and provided feedback on 11 February 2022. Natural England was consulted through provision of the Pre-Application draft HRA report Screening report and Statement to Inform an Appropriate Assessment on 25 July 2022.

E.3 Thames Estuary and Marshes Ramsar

Table E.3 HRA Screening matrix for the Thames Estuary and Marshes Ramsar

Project	Lower Thames Crossing	
European site under consideration	Thames Estuary and Marshes Ramsar (UK11069)	
Date	Author (Name/Organisation):	Verified (Name/Organisation):
August 2022	Iona Pearson CEnv MCIEEM, Jacobs	Russell Cryer CEnv MCIEEM, Jacobs
Description of project		
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European site by virtue of:		
Size and scale (road type and probable traffic volume)	The Project is a road scheme with mainly three lane carriageway in each direction. The route is approximately 23km long, 4.25km of which is in tunnel. It connects the A2 and M2 in Kent, east of Gravesend, with the M25 south of junction 29 via a twin bored tunnel under the River Thames east of Tilbury.	
Land take	The land required to construct the Project is defined by the Order Limits and totals approximately 2,394 hectares. There would be no direct habitat loss at this European site. There would be habitat loss (approximately 3434ha) within functionally linked land associated with this European site.	
Distance from the European site or key features of the site (from edge of the project assessment corridor)	The European site is crossed by the Order Limits, however at this location the Project is in tunnel and no surface works are required. The functionally linked land is crossed by the Order Limits.	
Resource requirements (from the European site or from areas in proximity to the site, where of relevance to consideration of impacts)	No resource from within the European site is required.	
Emissions (e.g. polluted surface water runoff – both soluble and	Water quality The Project has been designed with a surface water drainage system that would discharge clean surface water at greenfield runoff rate during construction and operation. It has been designed in accordance with	

<p>insoluble pollutants, atmospheric pollution)</p>	<p>established highway drainage standards. The discharges are into functionally linked land, except for the southern tunnel entrance compound construction drainage which will discharge into the western ditch that is part of the Ramsar 10-20m downstream of the proposed discharge point. The Project's environmental standards would be secured through the DCO and controlled via the standard Environment Agency discharge consenting regime. This would ensure no pollution of receiving waterbodies during construction and operation.</p> <p>Air quality</p> <p>The Project has the potential to affect local air quality of the functionally linked land during construction as a result of dust emissions. However, the Project has a number of standard industry best practice commitments in place to ensure dust is managed throughout the construction period to avoid release and trackout. The Project would be secured through the DCO and commitments are implemented via the Code of Construction Practice (Application Document 6.3). This would avoid and reduce dust release to the surrounding environment and the functionally linked land would not be affected.</p> <p>The Project has the potential to affect local air quality during construction as a result of traffic emissions from the affected road network (ARN). This European site is within 200m of the construction ARN.</p>
<p>Excavation requirements (e.g. impacts of local hydrogeology)</p>	<p>The Project would require land excavation for the new tunnel within the functionally linked land and under the Ramsar itself which could result in changes to the surrounding groundwater in terms of quantity and quality. The impact on the groundwater flows for the construction of the tunnel have been modelled as part of the hydrogeological assessment and the results showed that with the Project design which included an advance grout tunnel south of the river and a slurry wall at the North Portal, there would be a negligible change in groundwater. Any effects on the functionally linked land are therefore considered inconsequential.</p>
<p>Transportation requirements</p>	<p>The Project would require materials transported to and from the site via road. The access road to the northern tunnel entrance compound is within the functionally linked land associated with this European site. The A226 Gravesend Road compound and Milton compound are adjacent to this European site and also within functionally linked land. The noise, vibration and visual disturbance associated with material deliveries and access to the construction site may result in disturbance to qualifying species of the European site within functionally linked land.</p>
<p>Duration of construction, operation, etc.</p>	<p>The construction period proposed is six years commencing in 2025. The Project would be operational from 2030. There is no decommissioning proposed.</p>
<p>Other</p>	<p>Disturbance to qualifying species of the European site within the site itself and functionally linked land through noise, vibration and visual disturbance resulting from the construction and operation of the Project.</p> <p>The noise and vibration associated with the tunnel boring machine would not be perceivable beyond the water column, particularly given the background level of noise from shipping, and no disturbance to qualifying species of the European site within functionally linked land is predicted.</p> <p>Disturbance, to qualifying species of the European site within functionally linked land, from changes in recreational pressure is limited to the potential visitor pressures at Tilbury Fields during Project operation.</p>

	<p>There is predicted to be no changes in recreational pressure from Project construction as the use of the coastal paths through the functionally linked land would not be altered. Any changes in recreational pressure at the European site due to the Project providing easier access to the site (wider visitor pressures) is not predicted to occur as the distance any visitor would have to drive by using the Project would be greater than the distances given in both the Essex and Kent recreational strategy documents (Birdwise North Kent SAMMS Project Board, 2018; Essex County Council, 2019).</p> <p>The Project is committed to minimising and managing light emissions on the construction site such that the 0.5 lux contour is contained within the construction compound boundaries and no light spill would be perceivable within any European sites or functionally linked land. Operational phase highway lighting is associated with the main line and junctions across the Project and within the tunnel. The 0.5 lux contour is in cutting where the highway crosses functionally linked land and no light spill would intersect with any European sites or functionally linked land.</p> <p>Estuarine/marine Invasive Non-Native Species have been documented in the Thames Estuary (as reported in the ES Chapter 9 Marine Biodiversity (Application Document 6.1)). The Project also includes measures to manage the risk of introducing Invasive Non-Native Species [MB006].</p> <p>Terrestrial Invasive Non-Native Species have not been recorded within the Order Limits, however, the Project includes measures to identify prior to construction and remove or treat to prevent their spread, in accordance with standard best practice [TB005].</p> <p>The new road would be in tunnel under the intertidal habitats and coastal marshes (functionally linked land) used by qualifying species, therefore there is no risk of collision with traffic and no impact predicted to occur.</p> <p>The Project design requires the diversion of a number of electricity overhead lines as part of the construction phase. The diversions are limited to areas adjacent to the existing infrastructure. Therefore, the changes across the functionally linked land used by qualifying features north and south of the River Thames are such that no increased risk of collision is anticipated.</p>
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Description of avoidance and/or mitigation measures	
Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	No specific mitigation measures intended to address potential effects on this European site are taken into account in this assessment, in line with case law.
Location	N/A
Evidence for effectiveness	N/A
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	N/A

Characteristics of European site(s)	
A brief description of the European site to be produced, including information on:	
Name of European site and its EU code	Thames Estuary and Marshes Ramsar UK11069
Location and distance of the European site from the proposed works	Adjacent to the Project
European site size	5588.59 ha
Key features of the European site including the primary reasons for selection and any other qualifying interests	<p>Ramsar site criterion 2 – The site supports more than 20 British Red Data Book invertebrates and populations of the GB Red Book endangered least lettuce (<i>Lactuca saligna</i>), as well as the vulnerable slender hare's-ear (<i>Bupleurum tenuissimum</i>), divided sedge (<i>Carex divisa</i>), sea barley (<i>Hordeum marinum</i>), Borrer's saltmarsh-grass (<i>Puccinellia fasciculata</i>), and dwarf eelgrass (<i>Zostera noltei</i>).</p> <p>Ramsar site criterion 5 – Assemblages of international importance: Species with peak counts in winter: 45,118 waterfowl (five-year peak mean 1998/99-2002/2003)</p> <p>Ramsar site criterion 6 – Species/populations occurring at levels of international importance. Qualifying Species/populations (as identified at designation): Species with peak counts in spring/autumn: Ringed plover, <i>Charadrius hiaticula</i> Black-tailed godwit, <i>Limosa limosa islandica</i></p> <p>Species with peak counts in winter: Grey plover, <i>Pluvialis squatarola</i> Red knot, <i>Calidris canutus islandica</i> Dunlin, <i>Calidris alpina alpina</i> Common redshank, <i>Tringa totanus totanus</i></p>
Vulnerability of the European site – any information available from the standard data forms on potential effect pathways	Dredging Erosion Eutrophication General disturbance from human activities
European site conservation objectives – where these are readily available	<p>None available. It is considered that the SPA conservation objectives (below) are sufficient to support the management of the Ramsar interests.</p> <p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> • the extent and distribution of the habitats of the qualifying features • the structure and function of the habitats of the qualifying features

	<ul style="list-style-type: none"> • the supporting processes on which the habitats of the qualifying features rely • the population of each of the qualifying features • the distribution of the qualifying features within the site.
<p>Assessment criteria</p> <p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European site.</p>	
<p>The Project could negatively affect the European site through changes in air quality during construction. The European site is within 200m of the Project construction ARN. An assessment of the effect of changes in air quality has been completed in accordance with DMRB LA 105 Figure 2.98.</p> <p>The Project could negatively affect the qualifying species of the European site through loss of functionally linked land or noise, vibration and visual disturbance of the site itself and functionally linked land.</p> <p>The individual elements of the Project that could affect the Ramsar site and areas of functionally linked land north and south of the River Thames are as follows:</p> <ul style="list-style-type: none"> • Northern tunnel entrance compound • Northern tunnel entrance compound temporary drainage pipeline and outfall • Operational tunnel drainage outfall • A226 Gravesend Road compound and Milton compound • Southern tunnel entrance compound construction drainage discharge • Ecological mitigation areas 	
<p>Initial assessment</p> <p>The key characteristics of the site and the details of the European site to be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:</p>	
<p>Reduction of habitat area</p>	<p>No direct loss within the European site itself.</p> <p>The construction of the Project would result in the direct loss of approximately 343ha of functionally linked land. Of this, approximately 58.55ha would be permanently lost for operation with the remainder reinstated.</p> <p>Any changes in the area or quality of suitable habitat could result in birds needing to find replacement habitat with knock-on effects on the population size within the European site.</p> <p>Project field survey data shows that individuals of qualifying species from this European site use the functionally linked land that would be lost but there is uncertainty with regard to how these individuals contribute to the site population, and their use of functionally linked land.</p> <p>The changes in air quality relevant to this assessment are in nitrogen oxide (NOx) within 200m of the construction ARN. Increases in the deposition of NOx have the potential to change habitat composition depending on the sensitivity of the habitat type. These changes could affect the habitats for which the European site is designated.</p>

	Construction year	Total NOx (ug/m3) change (DS-DM)	>1% of Critical Level (30ug/m3)	Total N deposition (kg N ha-1yr-1)			
				Background	DM	DS	DS-DM change
	2025	1.36	Yes	15.26	17.85	18.52	0.67
	2026	1.36	Yes	15.26	17.79	18.20	0.41
	2027	1.24	Yes	15.26	17.73	18.44	0.71
	2028	1.35	Yes	15.26	17.66	18.49	0.83
	2029	0.31	Yes	15.26	17.60	17.80	0.20
	2030	Criteria not met for inclusion within the ARN.					
	<p>The traffic changes result in changes in nitrogen deposition over a period of five years and the predicted total N deposition in the DS scenario, in all of the construction years where the ARN criteria were met, is less than the lower critical load, 20 kg N ha-1yr-1, for the Thames Estuary and Marshes Ramsar site. The change in nitrogen deposition is over a short duration, five years, as this site is not affected by the operational ARN therefore any changes are highly unlikely to result in any detectable changes in the habitat (Caporn, et al., 2016), particularly as the DS nitrogen deposition is less than the lower critical load.</p> <p>Therefore, the changes in nitrogen deposition would result in no change in the habitats of the Thames Estuary and Marshes site and no LSEs are predicted to occur as a result of the Project alone.</p>						
Disturbance to key species	<p>The Project construction would result in disturbance of qualifying species within the European site and the functionally linked land. The area where the noise and visual disturbance thresholds were exceeded included approximately 56.6ha within the Ramsar and approximately 428.9ha within the functionally linked land north and south of the River Thames. The habitats comprised intertidal mud as well as agricultural land and coastal grassland. The areas of potentially disturbed functionally linked land was used by species from the SPA/Ramsar overwintering assemblage other than the intertidal habitats which recorded the greatest numbers and diversity of species including SPA/Ramsar qualifying features.</p> <p>For Project operation, the road is in tunnel for much of the functionally linked land and the potential for disturbance is only likely within functionally linked land north of the River Thames between the North Portal and the Tilbury Loop rail line. Approximately 65.4ha of agricultural habitat within the functionally linked land would be affected by changes in noise and visual disturbance greater than the agreed thresholds (>3dB change or level >55dB). These areas were used by a limited number of species from the SPA/Ramsar overwintering assemblage.</p> <p>The disturbance within the functionally linked land could cause changes in foraging behaviour and/or reduction in foraging opportunities which result in population declines of the qualifying species.</p>						
Habitat or species fragmentation	No effects have been identified for this European site.						

Reduction in species density	<p>No effects are anticipated as the habitat availability and existence of these risks already within the functionally linked land means the amount of change would not be perceptible in terms of population numbers of the European site.</p> <p>No effects are anticipated as a result of bird collisions with vehicles as the new highway is in tunnel within the area used by the qualifying species.</p>
Changes in key indicators of conservation value (water quality, etc.)	<p>The plants and invertebrates that contribute to the Ramsar criterion 2 are sensitive to changes in water quality and quantity. The bird species that contribute to Ramsar criterion 5 and 6 are considered to be less sensitive to the changes that could occur. The Project will discharge the southern tunnel entrance compound construction site runoff to a ditch approximately 10-20m upstream of the Ramsar site boundary. The integral good practice and design measures avoid changes in surface water quality and quantity at source, disrupting any pathway to effect, therefore the risk of LSE within the Thames Estuary and Marshes Ramsar is considered to be low. However, during consultation, Natural England advised that although the good practice and project design measures are considered to be effective, the scale of the project and the requirement to discharge directly in to the Ramsar site required more certain controls on the implementation of these measures. Therefore, LSE on the Thames Estuary and Marshes Ramsar site cannot be discounted.</p>
Climate change	<p>The European site considered within this assessment is coastal in location and therefore vulnerable to sea level rise, coastal flooding and coastal erosion. These direct consequences of climate change could result in loss or fragmentation of habitat and negative effects on the population sizes of the qualifying features, primarily waders and waterfowl. No LSE is anticipated with regard to climate change as there would be no long-term coastal squeeze effects attributed to the Project and no European sites are listed as sensitive to changes in ecological climate space or water resources / precipitation as a result of erratic weather patterns.</p>
Describe any likely impacts on the European site as a whole in terms of:	
Interference with the key relationships that define the structure of the site	<p>No effects on the structure of the European site.</p>
Interference with key relationships that define the function of the site	<p>There would be no direct effects on the function of the European site.</p> <p>The effects identified that could affect the function of the European site are as a result of the Project impacting the qualifying features outside the boundary of the European site (within functionally linked land). The key potential LSEs are a result of loss of habitat within functionally linked land, and water quality of the Ramsar itself and disturbance within the Ramsar site itself and within functionally lined land.</p>
Indicate the significance as a result of the identification of impacts set out above in terms of:	
Reduction of habitat area	<p>Potentially significant due to loss of suitable habitat for qualifying features within the functionally linked land associated with the European site.</p> <p>No LSE due to changes in air quality within 200m of the construction ARN.</p>

Disturbance to key species	Potentially significant disturbance of qualifying species within the European site and functionally linked land as a result of construction phase noise, vibration and visual disturbance.
Habitat or species fragmentation	No effects have been identified for this European site.
Disruption	No effects have been identified for this European site.
Change to key elements of the site (e.g. water quality, hydrological regime, etc.)	LSE could not be discounted as Natural England advised that although the good practice and project design measures are considered to be effective, the scale of the project and the requirement to discharge directly in to the Ramsar site required more certain controls on the implementation of these measures.
Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
The Project could affect the qualifying features of the European site, within the site itself and within functionally linked land, as a result of reduction in habitat area, changes to water quality and disturbance to key species. The scale and magnitude of these effects in the functionally linked land are such that LSEs on the European site could not be discounted.	
Outcome of screening stage	Sufficient uncertainty remains
Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant correspondence).	Natural England was consulted on the early sight draft of this assessment (not including AQ effects) 6 August 2021 and provided feedback on 11 February 2022. Natural England was consulted through provision of the Pre-Application draft HRA report Screening report and Statement to Inform an Appropriate Assessment on 25 July 2022.

E.4 Epping Forest SAC

Table E.4 HRA Screening matrix for the Epping Forest SAC

Project	Lower Thames Crossing	
European site under consideration	Epping Forest SAC (UK0012720)	
Date	Author (Name/Organisation):	Verified (Name/Organisation):
August 2022	Iona Pearson CEnv MCIEEM, Jacobs	Russell Cryer CEnv MCIEEM, Jacobs
Description of project		
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European Site by virtue of:		
Size and scale (road type and probable traffic volume)	The Project is a road scheme with mainly 3 lane carriageway in each direction. The route is approximately 23km long, 4.25km of which is in tunnel. It connects the A2 and M2 in Kent, east of Gravesend, with the M25 south of junction 29 via a twin bored tunnel under the River Thames east of Tilbury.	
Land-take	No land take is required from this European site	
Distance from the European Site or key features of the site (from edge of the project assessment corridor)	The European site is approximately 27km east of the Project.	
Resource requirements (from the European Site or from areas in proximity to the site, where of relevance to consideration of impacts)	No resource from within the European site is required.	
Emissions (e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)	<p>Water quality</p> <p>The Project has been designed with a surface water drainage system that would discharge clean surface water at greenfield run off rate during construction and operation. This European site is not linked to any of the water bodies receiving drainage discharge.</p> <p>Air quality</p> <p>This European site is not within the area could be affected by dust emissions during Project construction.</p> <p>The Project has the potential to affect local air quality during construction and operation as a result of traffic emissions from the affected road network (ARN). This European site is not within 200m of the construction ARN. This European site is within 200m of the operation ARN.</p>	

Excavation requirements (e.g. impacts of local hydrogeology)	There are no excavation requirements within or linked to this European site.
Transportation requirements	There are no transportation requirements that interface with this European site.
Duration of construction, operation, etc.	The construction period proposed is six years commencing in 2025. The Project would be operational from 2030. There is no decommissioning proposed.
Other	
Description of avoidance and/or mitigation measures	
Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	No specific mitigation measures intended to address potential effects on this European site are taken into account in this assessment, in line with case law.
Location	
Evidence for effectiveness	
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	
Characteristics of European Site(s)	
A brief description of the European Site to be produced, including information on:	
Name of European Site and its EU code	Epping Forest SAC UK0012720
Location and distance of the European Site from the proposed works	Approximately 27km east of the Project
European Site size	1630.74 ha
Key features of the European Site including the primary reasons for selection and any other qualifying interests	H4010. Northern Atlantic wet heaths with <i>Erica tetralix</i> ; Wet heathland with cross-leaved heath H4030. European dry heaths H9120. Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>); Beech forests on acid soils S1083. <i>Lucanus cervus</i> ; Stag beetle
Vulnerability of the European Site – any information	M02 Changes in biotic conditions H04 Air pollution, air-borne pollutants G01 Outdoor sports and leisure activities, recreational activities

available from the standard data forms on potential effect pathways	J02 Human induced changes in hydraulic conditions A04 Grazing																		
European Site conservation objectives – where these are readily available	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species • The structure and function (including typical species) of qualifying natural habitats • The structure and function of the habitats of qualifying species • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely • The populations of qualifying species, and, • The distribution of qualifying species within the site 																		
<p>Assessment criteria</p> <p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.</p>																			
<p>The Project could negatively affect the European site through changes in air quality during operation. The European site is within 200m of the Project operation ARN. An assessment of the effect of changes in air quality has been completed in accordance with LA105 Figure 2.98.</p>																			
<p>Initial assessment</p> <p>The key characteristics of the site and the details of the European Site to be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:</p>																			
Reduction of habitat area	<p>The changes in air quality relevant to this assessment are in nitrogen oxide (NOx) within 200m of the operation ARN. Increases in the deposition of NOx has the potential to change habitat composition depending on the sensitivity of the habitat type. These changes could affect the habitats for which the European site is designated.</p> <table border="1" data-bbox="499 1473 1426 1720"> <thead> <tr> <th>Min/ Max</th> <th>Back-ground kg N ha-1yr-1</th> <th>DM kg N ha-1yr-1</th> <th>DS kg N ha-1yr-1</th> <th>DS-DM Change in kg N ha-1yr-1</th> <th>Lower Critical Load kg N ha-1yr-1</th> </tr> </thead> <tbody> <tr> <td>Min</td> <td>30.10</td> <td>36.86</td> <td>37.08</td> <td>0.22</td> <td>10</td> </tr> <tr> <td>Max</td> <td>30.10</td> <td>58.53</td> <td>59.93</td> <td>1.01</td> <td>10</td> </tr> </tbody> </table> <p>The deposition in the DS scenario is greater than the Lower Critical Load (LCL) for this European site. The change in N deposition between the DS and DM scenario is greater than 1% of the relevant LCL. The qualifying habitats are considered likely to be present in the area affected and are listed as vulnerable to changes in N deposition within Natural England’s supplementary advice for Epping Forest (Natural England, 2019a). Therefore, LSE cannot be discounted at Epping Forest SAC as a result of the Project.</p>	Min/ Max	Back-ground kg N ha-1yr-1	DM kg N ha-1yr-1	DS kg N ha-1yr-1	DS-DM Change in kg N ha-1yr-1	Lower Critical Load kg N ha-1yr-1	Min	30.10	36.86	37.08	0.22	10	Max	30.10	58.53	59.93	1.01	10
Min/ Max	Back-ground kg N ha-1yr-1	DM kg N ha-1yr-1	DS kg N ha-1yr-1	DS-DM Change in kg N ha-1yr-1	Lower Critical Load kg N ha-1yr-1														
Min	30.10	36.86	37.08	0.22	10														
Max	30.10	58.53	59.93	1.01	10														

Disturbance to key species	No effects have been identified for this European site.
Habitat or species fragmentation	No effects have been identified for this European site.
Reduction in species density	No effects have been identified for this European site.
Changes in key indicators of conservation value (water quality, etc.)	No effects have been identified for this European site.
Climate change	No effects relating to climate change have been identified for this European site.
Describe any likely impacts on the European Site as a whole in terms of:	
Interference with the key relationships that define the structure of the site	No effects on the structure of the European site.
Interference with key relationships that define the function of the site	There would be no direct effects on the function of the European site. The effects identified that could affect the function of the European site are indirect as a result of the Project changes in traffic on the operational ARN which in turn changes the air quality (specifically nitrogen deposition) within 200m of the operational ARN. The key potential LSE is as a result of loss of habitat.
Indicate the significance as a result of the identification of impacts set out above in terms of:	
Reduction of habitat area	The changes in nitrogen deposition predicted within the European site exceeded 1% of the LCL for part of the area within 200m of the operational ARN therefore LSE cannot be discounted.
Disturbance to key species	No effects have been identified for this European site.
Habitat or species fragmentation	No effects have been identified for this European site.
Disruption	No effects have been identified for this European site.
Change to key elements of the site (e.g. water quality, hydrological regime etc.	No effects have been identified for this European site.

<p>Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</p>	
<p>The Project will result in changes in air quality from vehicle emission which exceed the 1% LCL threshold as set out in DMRB LA105 Figure 2.98. The area affected includes qualifying habitats for this European site and LSE cannot be discounted.</p>	
<p>Outcome of screening stage.</p>	<p>Sufficient uncertainty remains</p>
<p>Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant correspondence).</p>	<p>Natural England was consulted on the early sight draft of this assessment (not including AQ effects) 6 August 2021 and provided feedback on 11 February 2022. Natural England was consulted through provision of the Pre-Application draft HRA report Screening report and Statement to Inform an Appropriate Assessment on 25 July 2022.</p>

E.5 North Downs Woodlands SAC

Table E.5 HRA Screening matrix for the North Downs Woodlands SAC

Project	Lower Thames Crossing	
European site under consideration	North Downs Woodlands SAC (UK0030225)	
Date	Author (Name/Organisation):	Verified (Name/Organisation):
August 2022	Iona Pearson CEnv MCIEEM, Jacobs	Russell Cryer CEnv MCIEEM, Jacobs
Description of project		
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the European Site by virtue of:		
Size and scale (road type and probable traffic volume)	The Project is a road scheme with mainly 3 lane carriageway in each direction. The route is approximately 23km long, 4.25km of which is in tunnel. It connects the A2 and M2 in Kent, east of Gravesend, with the M25 south of junction 29 via a twin bored tunnel under the River Thames east of Tilbury.	
Land-take	No land take is required from this European site	
Distance from the European Site or key features of the site (from edge of the project assessment corridor)	North Down Woodlands is adjacent to the Project Order Limits that that have been acquired for ecological mitigation. The SAC is approximately 13km south east of the Order Limits acquired for construction of the new road.	
Resource requirements (from the European Site or from areas in proximity to the site, where of relevance to consideration of impacts)	No resource from within the European site is required.	
Emissions (e.g. polluted surface water runoff – both soluble and insoluble pollutants, atmospheric pollution)	<p>Water quality</p> <p>The Project has been designed with a surface water drainage system that would discharge clean surface water at greenfield run off rate during construction and operation. This European site is not linked to any of the water bodies receiving drainage discharge.</p> <p>Air quality</p> <p>This European site is not within the area could be affected by dust emissions during Project construction</p> <p>The Project has the potential to affect local air quality during construction and operation as a result of traffic emissions from the affected road network (ARN). This European site is not within 200m of the construction ARN. This European site is within 200m of the operation ARN.</p>	

Excavation requirements (e.g. impacts of local hydrogeology)	There are no excavation requirements within or linked to this European site. The habitat creation work proposed would not give rise to any Project impacts that could result in any effects on the North Downs Woodland SAC.
Transportation requirements	There are no transportation requirements that interface with this European site.
Duration of construction, operation, etc.	The construction period proposed is six years commencing in 2025. The Project would be operational from 2030. There is no decommissioning proposed.
Other	
Description of avoidance and/or mitigation measures	
Describe any assumed (plainly established and uncontroversial) mitigation measures, including information on:	
Nature of proposals	No specific mitigation measures intended to address potential effects on this European site are taken into account in this assessment, in line with case law.
Location	
Evidence for effectiveness	
Mechanism for delivery (legal conditions, restrictions or other legally enforceable obligations)	
Characteristics of European Site(s)	
A brief description of the European Site to be produced, including information on:	
Name of European Site and its EU code	North Downs Woodlands SAC UK0030225
Location and distance of the European Site from the proposed works	North Down Woodlands is adjacent to the Project Order Limits that that have been acquired for ecological mitigation. The SAC is approximately 13km south east of the Order Limits acquired for construction of the new road.
European Site size	288.58 ha
Key features of the European Site including the	H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco Brometalia</i>); Dry grasslands and scrublands on chalk or limestone

primary reasons for selection and any other qualifying interests	H9130. <i>Asperulo-Fagetum</i> beech forests; Beech forests on neutral to rich soils H91J0. <i>Taxus baccata</i> woods of the British Isles; Yew-dominated woodland*																																							
Vulnerability of the European Site – any information available from the standard data forms on potential effect pathways	I01 Invasive non-native species H04 Air pollution, air-borne pollutants G01 Outdoor sports and leisure activities, recreational activities B02 Forest and Plantation management & use																																							
European Site conservation objectives – where these are readily available	Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring; <ul style="list-style-type: none"> • The extent and distribution of the qualifying natural habitats • The structure and function (including typical species) of the qualifying natural habitats, and, • The supporting processes on which the qualifying natural habitats rely 																																							
<p>Assessment criteria</p> <p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the European Site.</p>																																								
<p>The Project could negatively affect the European site through changes in air quality during operation. The European site is within 200m of the Project operation ARN. An assessment of the effect of changes in air quality has been completed in accordance with LA105 Figure 2.98.</p>																																								
<p>Initial assessment</p> <p>The key characteristics of the site and the details of the European Site to be considered in identifying potential impacts. Describe any likely changes to the site arising as a result of:</p>																																								
Reduction of habitat area	<p>The changes in air quality relevant to this assessment are in nitrogen oxide (NOx) within 200m of the operation ARN. Increases in the deposition of NOx has the potential to change habitat composition depending on the sensitivity of the habitat type. These changes could affect the habitats for which the European site is designated.</p> <table border="1" data-bbox="438 1601 1412 1870"> <thead> <tr> <th rowspan="2">Minimum/maximum changes</th> <th colspan="4">Total NOx emissions (ug/m³)</th> <th colspan="5">Total N deposition (kg N ha⁻¹yr⁻¹)</th> </tr> <tr> <th>DM</th> <th>DS</th> <th>DS-DM change</th> <th>CL</th> <th>Background</th> <th>DM</th> <th>DS</th> <th>DS-DM change</th> <th>LCL</th> </tr> </thead> <tbody> <tr> <td>Minimum</td> <td>21.02</td> <td>21.25</td> <td>0.223</td> <td>30</td> <td>31.08</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>5</td> </tr> <tr> <td>Maximum</td> <td>21.47</td> <td>21.74</td> <td>0.27</td> <td>30</td> <td>31.08</td> <td>N/A</td> <td>N/A</td> <td>N/A</td> <td>5</td> </tr> </tbody> </table> <p>The change in NOx emissions was less than 0.3µg/m³ and therefore inconsequential at all of the sample points within the North Downs Woodlands SAC. Therefore, the change in N deposition would also be</p>	Minimum/maximum changes	Total NOx emissions (ug/m ³)				Total N deposition (kg N ha ⁻¹ yr ⁻¹)					DM	DS	DS-DM change	CL	Background	DM	DS	DS-DM change	LCL	Minimum	21.02	21.25	0.223	30	31.08	N/A	N/A	N/A	5	Maximum	21.47	21.74	0.27	30	31.08	N/A	N/A	N/A	5
Minimum/maximum changes	Total NOx emissions (ug/m ³)				Total N deposition (kg N ha ⁻¹ yr ⁻¹)																																			
	DM	DS	DS-DM change	CL	Background	DM	DS	DS-DM change	LCL																															
Minimum	21.02	21.25	0.223	30	31.08	N/A	N/A	N/A	5																															
Maximum	21.47	21.74	0.27	30	31.08	N/A	N/A	N/A	5																															

	inconsequential at this site and would not result in any material changes in the receiving habitats within the North Downs Woodland SAC. Therefore, a conclusion is reached that no LSE on North Downs Woodlands SAC, due to changes in air quality from vehicle emissions in operation.
Disturbance to key species	No effects have been identified for this European site.
Habitat or species fragmentation	No effects have been identified for this European site.
Reduction in species density	No effects have been identified for this European site.
Changes in key indicators of conservation value (water quality, etc.)	No effects have been identified for this European site.
Climate change	No effects relating to climate change have been identified for this European site.
Describe any likely impacts on the European Site as a whole in terms of:	
Interference with the key relationships that define the structure of the site	No effects on the structure of the European site.
Interference with key relationships that define the function of the site	No effects on the function of the European site.
Indicate the significance as a result of the identification of impacts set out above in terms of:	
Reduction of habitat area	No significant effect has been identified for this European site.
Disturbance to key species	No effects have been identified for this European site.
Habitat or species fragmentation	No effects have been identified for this European site.
Disruption	No effects have been identified for this European site.
Change to key elements of the site (e.g. water quality, hydrological regime etc.)	No effects have been identified for this European site.

Describe from the above those elements of the project, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	
The Project is not anticipated to give rise to LSE at the European site as a result of changes in air quality during operation.	
Outcome of screening stage.	Not likely to be any significant effects.
Are the appropriate statutory environmental bodies in agreement with this conclusion (delete as appropriate and attach relevant correspondence).	Natural England was consulted on the early sight draft of this assessment (not including AQ effects) 6 August 2021 and provided feedback on 11 February 2022. Natural England was consulted through provision of the Pre-Application draft HRA report Screening report and Statement to Inform an Appropriate Assessment on 25 July 2022.

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